

APPENDIX D

DAIMLER AG OPERATING PLAN FOR TECHNICAL AND ENVIRONMENTAL  
PRODUCT COMPLIANCE

**TABLE OF CONTENTS**

	<u>Page</u>
I. Daimler’s Commitment to Compliance: Tone from the Top.....	3
II. Compliance-Related Organizational Functions .....	3
A. Technical Compliance-Related Organizational Pillars .....	4
B. Segregation of Duties.....	5
C. Safeguarding Compliance in Project Future .....	5
III. Daimler’s Compliance Management System (CMS) .....	6
A. Compliance Strategy .....	6
B. Integrity Code .....	7
C. Employee Discipline and Compensation .....	7
D. Whistleblower System (BPO).....	8
E. Compliance Risk Assessment and Mitigation .....	9
F. Business Partner Integrity Management .....	10
G. Communication and Training .....	10
H. CMS Monitoring and Improvement.....	11
IV. Daimler’s Technical Compliance Management System (tCMS).....	12
A. Foundation and Mindset (Communication and Training) .....	12
B. Consultation and Cross-Functional Decision-Making.....	15
1. tCMS Multipliers .....	15
2. Infopoint Integrity .....	15
3. Cross-Functional Decision-Making.....	16
C. tCMS Governance.....	17
1. tCMS Risk Assessment and Mitigation .....	17
2. tCMS Monitoring and Improvement (Effectiveness Evaluation).....	18
3. tCMS Control Objectives.....	19
D. Supplier Integrity Management .....	19
V. Technical Compliance and Certification Control Measures .....	21
A. Communicating and Understanding Regulatory Requirements .....	21
1. Regulatory Monitoring Meeting .....	21
2. Enhanced Regulatory Database .....	22
B. Controls on the Development Process .....	22
1. Systematic Derivation of Technical Specifications .....	22
2. Software Compliance Guide .....	23
3. Identification and Tracking of Disclosure-Relevant Control Parameters.....	24
4. Compliance Check by Functional Group Leaders .....	25
5. Cascaded Software Confirmation and Approval .....	25

**TABLE OF CONTENTS**

(continued)

	<u>Page</u>
6. Software Screening .....	26
a) Screening of Functions for Review .....	26
b) Tool-Supported Calibration Check .....	26
7. Testing and Verification Process .....	27
C. Controls on the Certification Process .....	28
1. Off-Cycle Testing .....	28
2. Emission-Related Parts List .....	28
3. AECD Documentation, Approval, and Review .....	29
D. Lifecycle Management Control .....	30
1. Tracking and Recording of Certified Configuration .....	30
2. Software Change Process .....	30
3. Field Software Control .....	31
VI. Internal Audit (Corporate Audit) .....	31
A. Corporate Audit's Role .....	32
B. Post Settlement Audit Team ("PSAT") .....	33
C. CA Resources Dedicated to tCMS .....	34
VII. Third-Party Review .....	34
VIII. External Communication of Compliance Efforts .....	35
IX. Implementation and Monitoring Office .....	35

Integrity—one of four core corporate values of the Daimler Group (hereinafter, “Daimler” or the “Company”), along with passion, respect, and discipline—forms the basis for all Daimler business. For Daimler, integrity means acting in accordance with ethical principles and compliance with applicable laws, internal regulations, and all corporate commitments.

With the digital transformation rapidly changing the compliance risk landscape, Daimler has enhanced its compliance strategy and target-operating model to ensure a preventive, forward-looking Compliance Management System (“CMS”) that addresses emerging compliance risks, like those around its products’ compliance with technical and environmental requirements. Daimler’s CMS is a state-of-the-art system, which Daimler strives to enhance continuously, so it can address emerging topics as broad as human rights and data compliance. Daimler’s compliance operating model reflects core corporate priorities set by the Board of Management (“BoM”), like the corporate sustainability strategy. This strategy defines key sustainability themes, including, among others, climate protection and air quality. Thus, CMS serves as a robust and agile foundation to tackle emerging topics systematically.

This Operating Plan for Technical and Environmental Product Compliance (hereinafter, “Compliance Operating Plan”) provides an overview of the following critical components of compliance and technical compliance at Daimler: 1) Daimler’s longstanding organizational commitment to integrity and compliance, 2) its compliance-related organizational functions, 3) its CMS, 4) its technical Compliance Management System (“tCMS”), 5) technical compliance and certification control measures, 6) its internal auditing department (including the interaction between that department and tCMS), 7) a third-party compliance review, and 8) the Company’s efforts to communicate its compliance efforts externally.<sup>1</sup> This Operating Plan also provides the Company’s future commitment to compliance through the description of planned measures or initiatives. Daimler’s current Technical Compliance Communication Plan is attached hereto as Attachment A.<sup>2</sup>

Daimler embeds compliance in its daily business operations across all Daimler global business units and functions. CMS is governed by an independent organization within Daimler—which has an integrated network across the globe—to ensure compliance in daily operations. The Company promulgates one global Integrity Code, which forms the basis of its CMS and applies to all employees and business activities worldwide. As detailed below, it has tailored its CMS to cover a comprehensive suite of controls, including a whistleblower system, business partner integrity management, intensive training and compliance communication measures to internal and external entities, an annual Risk Assessment and annual Effectiveness Evaluation (part of the

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<sup>1</sup> Except where otherwise specified, this Compliance Operating Plan describes the current implementation of compliance efforts for the Mercedes-Benz Passenger Car division. The obligations contained in Section VII of the Consent Decree will apply to all development activities of light- and medium-duty vehicles intended for the U.S. market. As described herein, many of these efforts are scheduled for completion in coming months and years. The Company is continuously evaluating its progress towards meeting these deadlines, taking into consideration challenges posed by the COVID-19 pandemic.

<sup>2</sup> Attachment A demonstrates Daimler’s current Technical Compliance Communication Plan. This Plan is subject to adjustment as deemed necessary by Daimler.



Company's Enterprise Risk Management System), and the reflection of compliance and integrity in employee compensation and disciplinary processes.

Daimler has leveraged this existing CMS framework to create and implement a robust tCMS, which targets issues under discussion in this matter. tCMS brings together foundation and mindset initiatives through extensive communication and training programs. It also provides numerous resources for Research & Development ("R&D") engineers to facilitate technical compliance consultation and cross-functional decision-making processes. Further, it serves as a governance program that includes an annual tCMS Risk Assessment, an annual tCMS Effectiveness Evaluation, and the definition of tCMS control objectives. Finally, the supplier integrity management program seeks to ensure technical compliance from certain business partners.

Within these pillars, technical compliance is enforced and safeguarded through a series of technical compliance and certification control measures. These include measures to communicate and understand regulatory requirements, controls on the vehicle and software development process, controls on the certification process, and controls related to the lifecycle management of the vehicle.

Daimler's tCMS and technical compliance and certification controls work together as both prevention and detection measures that help ensure regulatory product conformity. Prevention measures include, for example, the segregation of duties between Certification and R&D; training, communication, and mindset initiatives; opportunities for technical compliance consultation and cross-functional decision-making; the communication of regulatory requirements; and a Software Compliance Guide. Detection measures include, for example, compliance checks by Functional Group Leaders; software screening tools; and on-demand testing and verification and off-cycle testing. Compliance is further safeguarded through lifecycle management controls, including a software change process and sample checks of software in vehicles in the field.

Daimler has a well-established and comprehensive independent internal auditing department, Corporate Audit. Corporate Audit will support and monitor the successful implementation and operation of tCMS through an audit program, pursuant to which it will identify aspects of the following to audit: 1) the design, implementation status, and effectiveness of the relevant tCMS processes, including certification processes, software development, and compliance with regulations (particularly compliance with emission standards); 2) compliance with terms of the Consent Decree; and 3) the capabilities of individuals or organizational units to carry out tasks assigned to them regarding tCMS processes or compliance with the terms of the Consent Decree. A Post-Settlement Audit Team ("PSAT") within Corporate Audit will be specifically dedicated to conducting these audits and will include members with significant technical experience.

CMS, tCMS (with technical compliance and certification control measures), and Corporate Audit work together to build an effective technical compliance program, which is detailed below.

## **I. Daimler’s Commitment to Compliance: Tone from the Top**

Compliance is an indispensable and embedded part of Daimler’s culture. The tone from top-level management executives continually reinforces this commitment to compliance.

Daimler was one of the first German companies to create a BoM-level position for Integrity and Legal Affairs (“IL”). This position explicitly includes compliance. Leadership regarding Daimler’s commitment to integrity and compliance comes directly from this BoM member and from the BoM as a whole. The BoM in turn reports to an independent Supervisory Board; the Supervisory Board’s Audit Committee receives regular reports from the BoM member for IL and the leaders of relevant compliance functions, and regularly meets about compliance-related issues.<sup>3</sup> Both the Chief Compliance Officer and the Vice President of Legal Product & Technical Compliance report directly to the BoM member for IL.

Daimler also established in 2012 an external, independent Advisory Board for Integrity and Corporate Responsibility (the “Advisory Board”), which includes sustainability experts from the fields of science and business, as well as from civic organizations. This expertise furnishes Daimler with critical and constructive support for integrity and corporate responsibility. The Advisory Board meets regularly with members of the BoM and other Daimler executives on various topics, including emissions topics. Daimler receives further support from leading legal and consulting firms to continuously enhance its compliance programs.

## **II. Compliance-Related Organizational Functions**

In 2010, Daimler created a standalone Compliance Department (“IL/C”), which was formerly part of the larger Legal Department, led by the Chief Compliance Officer (an E1-level employee) who runs Daimler’s CMS. Daimler later created tCMS, which is run by the Legal Product & Technical Compliance Department (hereinafter, “IL/P”), led by the Vice President of Legal Product & Technical Compliance (also an E1-level employee). Both of these departments regularly report to the Audit Committee of the Supervisory Board.

To foster cooperation among compliance-related IL functions, Daimler utilizes a Compliance Board, led by the Chief Compliance Officer. The Compliance Board is involved in

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<sup>3</sup> The German Stock Corporation Act requires Daimler AG to apply a dual management system featuring strict personal and functional separation between the BoM and the Supervisory Board. Accordingly, the BoM manages the Company while the Supervisory Board monitors and advises the BoM. In accordance with the German Codetermination Act, the Supervisory Board comprises twenty members, half of whom are elected by shareholders and half of whom are elected by Daimler employees in Germany. Supervisory Board members are obliged by law to act in the Company’s best interest. Members of the Supervisory Board attend trainings on topics such as corporate governance or changes brought about by new legislation, and new members receive an “onboarding” program that gives them the opportunity to exchange views with members of the BoM and other executives on current issues related to the various areas of responsibility of the BoM.

Compliance is regularly on the agenda of the Supervisory Board and BoM meetings. At regular intervals, the BoM reports to the Supervisory Board on compliance-related topics. Together with the Supervisory Board, the BoM issues a declaration of compliance with the German Corporate Governance Code each year. The BoM ensures that provisions of applicable law, official regulations, and Daimler’s internal guidelines are adhered to, and works to make sure that Daimler companies comply with those rules and regulations.

all decisions of importance to the Company's compliance management systems. It ensures harmonization of the broader future compliance landscape, such as the Company's overall compliance strategy, its standardized risk assessment, and joint monitoring of Daimler's compliance management systems. The Compliance Board also supervises the annual Effectiveness Evaluation process, the results of which are considered in the Daimler Enterprise Risk Management and Internal Control processes, thereby ensuring a holistic view of Daimler's overall compliance risk landscape.

Daimler has invested heavily in its integrity and compliance organization. Since 2013, there has been a 98%+ increase in employees in global IL departments. As of December 31, 2019, Daimler employs 574 individuals in its central IL organization at headquarters and 569 individuals in its global IL networks throughout the world. These networks are embedded throughout the Company along divisional and regional lines, and support the local aspects of the business in fulfilling their compliance duties. They safeguard compliance in the markets at an operational level. Each year, Daimler undertakes a risk assessment to determine whether additional resources are necessary. If so, additional funding is requested to create new or additional positions and/or an increased budget.

#### **A. Technical Compliance-Related Organizational Pillars**

IL/P designs and monitors the implementation of tCMS. These efforts include participating in the cross-functional decision-making process, conducting independent second-line testing of tCMS control measures, and steering Daimler-wide tCMS monitoring and improvement initiatives. IL/P has a particular focus on risk, assessing all risks connected to Daimler's products, including intellectual property-, product liability-, safety-, and certification-relevant questions, as well as risks related to emissions. This work is primarily preventive in nature and includes a robust advisory service regarding all technical legal and compliance topics. IL/P is independent from R&D and Certification and consists of an interdisciplinary expert team of lawyers (~40%; many of whom have a technical background), engineers (~30%), and business experts (~30%). This team works together to handle complex technical compliance topics, ensuring that questions of interpretation are assessed from technical, legal, financial, and reputational perspectives.

Dedicated departments within R&D implement, support, and reinforce the technical compliance system (hereinafter, "tCMS R&D"). tCMS R&D implements tCMS and forms a nexus between R&D and IL/P. tCMS R&D works to establish adequate tCMS control procedures in R&D, provide compliance and risk management guidance and technical consultation opportunities to engineers, coordinate implementation of the tCMS program elements, steer the tCMS Multiplier network, and lead the cross-functional decision-making process. tCMS R&D has a direct reporting line to the BoM member for R&D.<sup>4</sup>

Along with IL/P and tCMS R&D, the third key partner in Daimler's implementation of technical compliance is the Certification Department ("Certification"). Core Certification

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<sup>4</sup> Daimler created sixty-one new positions within the R&D department at Mercedes-Benz Cars dedicated to tCMS and twenty new positions in the R&D department at Mercedes-Benz Van.

processes include homologation, the preparation and submission of applications for Certificates of Conformity (including AECD disclosures), vehicle type approval, and regulatory screening. In fulfilling these duties, Certification has implemented its own controls to ensure technical compliance. Certification reports to the Head of Quality Management.

The U.S. legal and compliance organization is part of the global IL organization. Along with U.S. lawyers, this organization includes a newly established technical compliance officer position. In addition, Daimler is currently in the process of building its tCMS R&D organization in the United States. It has hired a senior manager for regulatory and technical compliance processes, who reports to IL, as well as a manager and staff in the tCMS R&D organization who report to tCMS R&D Germany. Daimler will also establish six local tCMS multipliers in the global tCMS R&D organization. These teams, including in Ann Arbor, Michigan, and Long Beach and Sunnydale, California, will address technical compliance inquiries and will identify specific training demands. One additional multiplier for the Seattle, Washington location will be nominated in 2020.

## **B. Segregation of Duties**

Daimler safeguards the independence of Certification with a clear segregation of duties, which is enforced through different reporting lines. Historically, Certification resided within R&D. In September 2018, Certification moved from R&D to an entirely separate organization: Quality Management (“QM”). Certification combines technical competence with the ability to challenge other aspects of the organization from the perspective of regulatory authorities. Moving Certification to QM further enables it to challenge R&D when necessary, and fits within the existing QM framework. R&D and QM report to different BoM members. Likewise, IL, which remains segregated from both Certification and R&D, also reports to a different BoM member. Corporate Audit also primarily reports to a different BoM member than Certification and R&D.

## **C. Safeguarding Compliance in Project Future**

On May 22, 2019, shareholders approved the reorganization of the Daimler Group through “Project Future.” Project Future resulted in Daimler AG operating as three legally distinct entities: Mercedes-Benz AG, Daimler Truck AG, and Daimler Mobility AG. These three entities are fully owned subsidiaries of Daimler AG, the parent company. Daimler launched the new corporate structure on November 1, 2019. Under this new structure, Daimler AG exercises corporate governance, strategy, and management functions, and provides cross-divisional business services. Daimler has ensured ongoing commitment to integrity and compliance through binding policies or procedures and reporting lines of relevant governance and control functions. IL remains a corporate-level function within Daimler AG, ensuring continued oversight and implementation of compliance, including through annual effectiveness evaluations. The tCMS R&D departments for Mercedes-Benz Passenger Cars and Mercedes-Benz Vans are part of the newly formed Mercedes-Benz AG.

### III. Daimler's Compliance Management System (CMS)

Daimler's CMS enforces basic principles and measures intended to promote values-based compliant behavior throughout the Company. CMS reflects national and international standards and applies to all Daimler central units and majority-owned shareholdings. This Section addresses selected CMS topics important for technical and environmental product compliance; it does not include every aspect of CMS.

#### A. Compliance Strategy

In recent years, Daimler has implemented vital changes in its overall compliance strategy. Historically, Daimler's robust CMS focused—like in most large, multinational organizations—on traditional corporate compliance topics, such as corruption and other business crimes. More recently, the digital transformation and technological progress significantly altered the corporate strategy and business models of automotive companies, including Daimler. The major trends in the automotive industry's ongoing transformation are often encapsulated by the acronym "CASE," which stands for connected, autonomous, shared, and electric. Daimler's senior leadership has decided to address CASE and the broader evolution of the business landscape by defining an ambitious sustainability strategy and by analyzing the impact on key compliance risk areas. The results of this analysis form the basis of the current compliance strategy and extend well beyond traditional compliance topics.

Today's corporate compliance strategy at Daimler sees compliance as an end-to-end, value-chain-integrated function, characterized by the following:

- **A robust foundation** of well-established core elements, which constitute the operating model for compliance at Daimler. These core elements have undergone continuous improvement, with confirmation from a number of internal and external audits. Daimler has broadened its compliance strategy in recent years, applying this foundation to systematically address emerging compliance topics such as technical compliance, human rights, and data compliance.
- **Broad interdisciplinary expertise at the central IL department** to understand and appropriately manage emerging compliance topics. This is why IL/P is made up of an interdisciplinary team of lawyers (≈40%; many of whom have a technical background), engineers (≈30%), and business experts (≈30%). It is also why IL/C houses the position of the Chief Digital Risk Officer, reflecting Daimler's awareness of the broad range of potential compliance risks resulting from digitization. In addition, experts on human rights, autonomous driving, and other emerging corporate compliance topics fill recently established positions at IL.
- **An updated governance model** with a Compliance Board established in 2018 to steer and monitor the implementation of Daimler's compliance strategy. The Compliance Board focuses on programmatic aspects that affect multiple compliance topics, including the consistent management of risk areas.
- **An increased agility** to support a preventive, forward-looking CMS. This agility is a direct result of the building blocks already mentioned. Interdisciplinary expertise helps

compliance staff evaluate the relevance of emerging compliance topics, while robust core elements of the CMS provide a blueprint for systemizing relevant topics, with the Compliance Board to oversee this process.

Because of this framework and foundation, Daimler can address emerging compliance risks, like technical or data compliance, through an already-effective structure. Additional topics like human rights compliance have also been enhanced and are now subject to central IL governance.

## **B. Integrity Code**

Daimler has one global Integrity Code, available on Daimler's website, binding for all employees. Daimler employees may easily access through a dedicated Integrity Code Microsite guidance on how to apply the Integrity Code in everyday Company life, including by reviewing frequently asked questions. In 2016, and again in 2019, the Daimler Integrity Code was rated best in class by the German magazine *Compliance Manager*, which compared the codes of the top thirty DAX (German stock market index) companies.

These accolades notwithstanding, Daimler launched an ambitious process to enhance its Integrity Code, incorporating input from its employees, internal and external subject matter experts, and its external Integrity Advisory Board, and issued an enhanced Integrity Code in October 2019. One important aim of this initiative was to strengthen emphasis on technical compliance and environmental protection in the Integrity Code. The enhanced Integrity Code emphasizes Daimler's goal of reducing emissions and improving air quality, and underscores the importance of conforming products and processes to laws and regulations, while also emphasizing the need to consider the underlying aims of these laws and regulations. Finally, it counsels employees to consider the full impact of their actions and speak up to identify and address potential risks. The enhanced Integrity Code is available in ten languages on the Company's Intranet, including English. Based on the BoM approval in June 2019, worldwide rollout of the enhanced Integrity Code started in October 2019 supported by a broad communication initiative, which utilized the Daimler Intranet, the Integrity Code Microsite, Infopoint Integrity, FAQs, brochures, and "Tone from the Top" statements, such as a preface signed by the entire BoM. External and internal communications experts support this effort.

Furthermore, the enhanced Integrity Code is the foundation for the new 2020 Integrity@Work training. This enhanced training is mandatory for all white-collar employees. Daimler will also measure awareness of the Integrity Code via an employee survey. The enhanced Integrity Code will continue to be the legal and ethical framework for all Daimler entities.

## **C. Employee Discipline and Compensation**

Compliance is part of Daimler's corporate culture and thus is embedded in its compensation and disciplinary processes. Daimler began to integrate compliance and integrity into its compensation processes in 2010. A change in the variable compensation system for senior and middle managers occurred in 2017, pursuant to which variable compensation was based solely on company success, *i.e.*, one common target. This helps ensure that individual employee



decisions are unlikely to impact that employee's variable compensation. By decoupling the specific performance of a unit or business segment from individual compensation, Daimler aims to disincentivize potentially noncompliant behavior, as the upside of misconduct becomes much smaller than the potential downside for each employee. Daimler changed its variable compensation system again in 2019. Among other performance factors, Daimler has incorporated integrity into its variable compensation structure for managers.<sup>5</sup> The financial incentives for senior and middle managers are directly linked to the results of select questions from the relevant employee surveys.

Regardless of management level, compliance requirements apply to all employees, and employees are subject to disciplinary measures in the event of violations. Daimler policies provide for disciplinary action when employees violate any general or technical compliance-related requirements.

Based on experience with this newly implemented compensation model, Daimler will evaluate whether to make further adjustments in 2020.

#### **D. Whistleblower System (BPO)**

Daimler's whistleblower system, the Business Practices Office ("BPO"), protects Daimler's values, employees, and assets by ensuring that potential misconduct is effectively reported, assessed, investigated, and mitigated. The BPO serves as a single corporate-level processing center for any incidence of suspected misconduct.

The BPO allows Daimler employees and external parties alike to report any suspected misconduct anywhere in the world. The BPO is available around the clock to receive information by email or post. An external toll-free hotline is also available in the United States, Brazil, Japan, and South Africa. Reports can be submitted anonymously if local laws permit. In Germany, reports to the BPO can also be submitted via a Neutral Intermediary (*e.g.*, via phone or email), who is an independent external attorney. In 2019, the BPO Neutral Intermediary received training on vehicle emissions and certification compliance issues and an independent tCMS expert contact point to clarify vehicle emissions and certification compliance questions. She also participated in an expert-level dialogue with IL/P and an external technical expert regarding vehicle emissions and certification compliance risks.

In an effort to increase trust in, and awareness of, the whistleblower system, the Company has established a continuous communication process that includes the periodic provision of information to employees about the type and number of reported violations, as well as information about measures taken in response to BPO cases. Daimler encourages employees to report potential misconduct via various communication channels, and all managers have a duty to report "serious" risk incidents. Global surveys and benchmarking around the number of contacts with the BPO indicate that employees are aware of, and are comfortable with using, the BPO.

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<sup>5</sup> This change did not affect BoM member compensation. Integrity was a factor in BoM member compensation prior to 2019.

In 2018, Daimler enhanced the BPO by adding an E4-level position (with engineering experience) for handling technical compliance cases, among other measures. It also updated its Treatment of Violations Policy, attached hereto as Attachment B. The Policy, which underlies the work of the BPO, features a risk-based approach to differentiate between serious and minor violations, and it imposes different reporting obligations depending on whether the violation is serious or minor. Daimler's list of "violations posing a serious risk" to the Company includes violations related to "*environmental regulations*" and "*engineering specifications and/or technical safety*." In 2020, Daimler will clarify in its Treatment of Violations Policy and in related training that environmental noncompliance of a product within the U.S. always constitutes "serious risk." The Company has also formalized and documented the requirement that the BPO employees assigned to any reported potential environmental/technical compliance violation discuss such a report with the head of the BPO in person, in accordance with Daimler's four-eyes principle.

In 2019 and 2020, Daimler has and will continue to intensify its efforts to raise awareness and trust of the BPO, particularly with respect to R&D engineers, by launching a new two-year communication campaign within R&D to promote the BPO (*e.g.*, with the use of global BPO screen locks, web-based and face-to-face training, and promotional materials). This includes communicating to employees a real-life BPO technical compliance case via Daimler's social Intranet, introduction of the BPO technical compliance case manager via the social Intranet, BPO promotional messages displayed on cafeteria screens in select locations, posters for factory floor meetings, knowledge cards/pocket guides for all employees, and a BPO promotional truck. This communication campaign will last until at least the end of 2021. The role of the BPO is also part of Daimler's business partner training awareness modules.

Daimler has started to leverage the BPO to conduct root-cause analyses to understand and identify patterns in misconduct and prevent recurrence.

Daimler has implemented a new IT system to safeguard the four-eyes principle in BPO cases, *i.e.*, to ensure that a BPO case cannot be closed without review by two BPO employees.

## **E. Compliance Risk Assessment and Mitigation**

Daimler systematically aims to mitigate compliance risks. Each year, IL analyzes and assesses the compliance risks of all Daimler-controlled entities (*e.g.*, entities in which Daimler owns a majority stake). These analyses are based on business entities' characteristics, such as business models and revenue, and on self-assessment questionnaires completed by relevant Daimler business leaders. The results of the Risk Assessment form the basis for the implementation of centrally defined risk-mitigating measures. The scope of the compliance Risk Assessment is continuously extended to emerging compliance topics. Daimler built on its existing Risk Assessment processes to create a Risk Assessment for tCMS. See Section IV.C.1. for information regarding the tCMS Risk Assessment.

In 2019, Daimler further harmonized its compliance Risk Assessment processes to continue to foster a proactive and holistic approach to compliance risk management. All of the Company's compliance Risk Assessments (*e.g.*, its tCMS Risk Assessment, its Antitrust Risk Assessment, etc.) are coordinated in an Integrated Compliance Risk Assessment ("ICRA+"),



which brings together compliance risk assessments into a single process, on a single timeline, and using the same IT infrastructure. A new joint compliance IT tool supports this process.

In 2020, Daimler established a new Steering Committee ICRA & Monitoring Improvements (“SteCo ICRA & Monitoring”) to discuss further improvements to its compliance risk management process, such as the use of additional digitalization opportunities. The SteCo ICRA & Monitoring consists of senior management from the compliance-related IL functions.

#### **F. Business Partner Integrity Management**

Daimler integrates business partner (including supplier) compliance into its CMS through its business partner integrity management program. Key elements of the business partner program are 1) diligent selection; 2) contractual safeguarding; 3) awareness and training; and 4) monitoring and response measures. First, Daimler employs a risk-based due diligence process before determining whether to enter into a business relationship with another entity, including integrated background checks and, in certain circumstances, mandatory on-site audits. Daimler uses a thorough diligence-based process for both new contracts and the renewal of contracts with existing partners to confirm that its business partners comply with its integrity and compliance principles. Daimler also ensures that compliance clauses appear in all standard contracts. It raises integrity and compliance awareness with its business partners through voluntary online awareness/communication modules and face-to-face sessions. Finally, Daimler monitors the actions of its business partners to identify and respond to integrity and compliance concerns. Consequences for business partners that fail to meet Daimler’s integrity and compliance standards include possible termination of business relations.

Daimler’s communications and sensitization efforts, *see* Section III.G., extend to business partners. For example, it provides to sales business partners that sell Daimler vehicles or vehicle parts and suppliers<sup>6</sup> Compliance Awareness Modules (“CAM”), which include information on compliance topics and contact information for Daimler’s BPO. In 2019, Daimler updated the content of its sales CAM and began rollout to sales business partners. In addition, it will implement an automatic CAM invitation process for every new sales business partner by the end of 2020. *See* Section IV.D. for information regarding supplier integrity management related to technical compliance.

#### **G. Communication and Training**

Integrity and compliance communication at Daimler is managed through close cooperation between the responsible departments and the central communications department. Daimler works to target specific employee groups with tailored compliance messages. In doing so, it strives to achieve a balance between permanently available information and specific, event-driven communications.

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<sup>6</sup> The supplier compliance provisions contained herein are generally intended to reach those suppliers which Daimler have a contractual relationship with and which directly provide to Daimler Emission-related software, Emission-related software calibrations, or Emission-related hardware parts for use in vehicles intended for certification in the United States or California.

Daimler allocates training modules to certain employee groups based on a central requirement assessment and an annual planning exercise, taking into account the groups' respective roles and functions. For example, mandatory web-based employee training on several compliance topics, including the Integrity Code, occurs at least once every three years; new white-collar employees are required to complete this training within 90 days. A dedicated central training department steers Daimler's systematic approach and target group-oriented specific expert modules. In addition to these central assignments, managers can assign other relevant trainings to their staff. System-based reporting functionalities and automated reminders support the managers in fulfilling their duty to track completion rates. Facilitated by an advanced IT platform, Daimler takes a systematic and practical approach to continuously adapt its compliance trainings to prevent potential compliance violations; this includes identifying and adding emerging compliance topics (*e.g.*, technical compliance) to training materials. The BoM frequently receives updates on the status of compliance trainings and, if necessary, initiates measures to improve training programs.

Supplementing the centrally promulgated web-based trainings, Daimler's local IL networks, which consist of qualified compliance experts, provide in-person trainings that reflect the specific risk profiles of their entities. This is supported by Daimler's central training department, which provides standardized materials, methods, and infrastructure for documentation.

See Section IV.A. for additional details regarding technical compliance communication and training measures.

## **H. CMS Monitoring and Improvement**

Constant monitoring and improvement—both to enhance the performance of existing processes and to ensure that programmatic elements adjust to meet the Company's evolving risk profile—are hallmarks of Daimler's CMS. First, leaders of core compliance functions evaluate the effectiveness of CMS in the annual Effectiveness Evaluation. The Compliance Board, led by the Chief Compliance Officer, considers these evaluations and reports the results of its analysis to the Group Risk Management Committee, which assesses enterprise risks.<sup>7</sup> Next, the results are entered into Daimler's internal control system and risk and opportunity reports. The BoM and Supervisory Board have overall responsibility for the internal control system and continuously receive reports monitoring compliance risk mitigation measures.

These processes were expanded in 2017 to cover tCMS—the Vice President of Legal Product & Technical Compliance became a regular member of the Group Risk Management Committee in 2017, and Effectiveness Evaluations of tCMS began in 2017. See Section IV.C.2. for information regarding the tCMS Effectiveness Evaluation.

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<sup>7</sup> The Group Risk Management Committee consists of members from accounting, legal, CMS, tCMS, and Corporate Audit, and is led by the CFO.

#### IV. Daimler's Technical Compliance Management System (tCMS)

The BoM has defined technical compliance as a core corporate compliance objective.<sup>8</sup> For Daimler, technical compliance means adhering to technical and environmental regulations, standards, and laws, while taking into account the fundamental aims of these laws and regulations. Daimler enhanced its existing CMS with additional measures and processes to create tCMS. tCMS's primary objective is to address all significant technical and environmental risks arising during the product life cycle, including risks related to emissions, safety, new technologies, and certification. Initially, tCMS is focusing primarily on environmental risk (vehicle emissions in particular), but is gradually expanding to encompass all other significant corporate risks in these areas.

tCMS's work comes to life through three core pillars: 1) **foundation and mindset**, *i.e.*, training and values-based mindset initiatives; 2) **consultation and cross-functional decision-making**, *i.e.*, offering multiple points of contact and processes to support and guide employees with technical compliance questions or requests for consultation; and 3) **tCMS Governance**, which safeguards compliance by identifying and mitigating technical and environmental compliance risks, conducting an annual Effectiveness Evaluation, and defining control objectives. In addition, tCMS involves the implementation of several technical compliance and certification control measures, described in Section V. These measures are crucial elements that help ensure that R&D products comply with regulatory requirements and internal standards and are robustly documented and disclosed.

Working in the context of these core pillars, multiple functions within Daimler help to safeguard technical compliance. As discussed in Section II.A., IL/P designs and monitors the effectiveness of tCMS. R&D, which develops engines, engine control units, software functions, and function calibrations, is considered the "risk owner." Operating within R&D, dedicated tCMS R&D units house experts in technical compliance who report directly to the respective heads of R&D. The tCMS Multiplier Network serves as a link between R&D and compliance functions. Complex questions regarding technical compliance are evaluated and resolved through an interdisciplinary clearing process that takes into account technical and legal criteria. Sitting within QM, Certification is also a partner in technical compliance, with its own independent controls augmenting the work of tCMS R&D.

##### A. Foundation and Mindset (Communication and Training)

The first pillar of tCMS is *foundation and mindset*. Building upon the foundation of the Company's CMS, *foundation and mindset* seeks to build a technical compliance culture (known as technical integrity) within Daimler. To further this goal, R&D leadership developed and committed itself to two key guiding principles, in addition to those within the Integrity Code:

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<sup>8</sup> To ensure that the BoM and Supervisory Board are fully informed regarding technical compliance, informational resources are offered to individuals who perform supervisory and management functions. New members of the Supervisory Board receive comprehensive training, including on technical compliance management.

*Speak Up*: “We identify insecurities and risks as early as possible, and initiate resolving them. We address issues responsibly and constructively.”

*Judgment Calls*: “We take into account not only our business interests but also the expectations of our customers and society. We make decisions transparent and document them along with the considerations upon which they are based.”

These principles provide a common understanding and orientation for all R&D employees. In 2018, senior and middle R&D management participated in six-hour face-to-face technical integrity workshops to deepen their understanding about technical integrity, raise awareness, encourage the “Speak Up” principle, and empower managers to perform follow-up processes. Additionally, these principles, which are communicated to employees through ongoing trainings and workshops, provide basic orientation around technical compliance and integrity.

tCMS-focused training and guidance resources help ensure that R&D employees begin the development process with a technical compliance foundation and knowledge of regulatory requirements and internal standards. With the advent of tCMS, Daimler began providing tCMS training in face-to-face sessions to help ensure that the relevant employee groups had a full understanding of the new systems and processes. All relevant existing R&D employees have been instructed to attend in-person training regarding tCMS values and program elements. The content of this training includes 1) the purpose and scope of tCMS; 2) the guiding “Speak Up” and “Judgment Calls” principles; 3) the principles of tCMS; and 4) tCMS options for support, including the introduction of relevant contact persons. Daimler’s training approach on technical compliance includes a comprehensive introduction to tCMS, interactive elements to test knowledge regarding tCMS and an interactive case study application, and an introduction to decision-making processes via Daimler’s committee structures. These tCMS trainings also include a component on certification topics, including 1) resources for information regarding regulatory requirements; 2) details of the certification process; 3) the interrelation between development and certification; and 4) points of contact. Trainees’ tCMS knowledge levels are assessed before and after training sessions through surveys and feedback cards. Daimler uses trainee feedback to improve the quality of the trainings.

More than 21,700 Mercedes-Benz Cars employees and more than 1,600 Mercedes-Benz Vans employees have been trained in face-to-face technical compliance training meetings, representing more than 96% of all permanent employees in R&D. Approximately 550 MBRDNA employees have also received tCMS training, representing 85% of total MBRDNA employees. Currently, new employees also receive face-to-face tCMS training. In 2019, Daimler began providing mandatory web-based tCMS training. This training launched in April 2019 for the Mercedes-Benz Passenger Cars and in September 2019 for Mercedes-Benz Vans. The tCMS training program reflects the results of the tCMS Risk Assessment for 2018, *see* Section IV.C.1., among other factors. The tCMS Risk Assessment will continue to inform the content of tCMS training going forward so that emerging areas of risk may be addressed.

Certification also provided specific training to R&D U.S. powertrain employees who work on emissions and OBD topics. Emissions certification trainings addressed certification requirements, emissions and fuel consumption testing, AECD disclosure requirements, and

running changes and aftersales topics. OBD training materials covered OBD systems in motor vehicles, how OBD systems work, worldwide OBD requirements, potential causes of non-conformance in OBD systems, addressing potential instances of non-conformance during and after certification, U.S. OBD regulations, and links to further information.

Daimler, through Certification, now provides a specific, mandatory training on U.S. and California air emissions regulations, including fuel consumption testing, running changes, OBD, AECDs, and defeat devices, to relevant R&D employees, periodically evaluating which employees should receive this training.

In late 2017, training was provided by tCMS R&D, IL/P, Certification, and outside counsel to MBRDNA employees located in Long Beach, California, and Redford, Michigan, regarding regulatory requirements for AECD disclosure and the prohibition of defeat devices. During this in-person training, MBRDNA employees were able to ask questions and pose hypotheticals about the application of AECD and defeat device regulations and guidance to real-life engineering situations. R&D employees in Germany also received this training in 2017 and 2018.

In addition, in 2018, Certification provided AECD Documentation Guidelines, attached hereto as Attachment C, to relevant R&D departments in Germany. These Guidelines summarize regulatory requirements regarding AECD disclosures and the prohibition of defeat devices, and provide 1) guidance interpreting the regulatory text; 2) details regarding each of the regulatory justifications for AECDs; 3) Daimler's best practices on AECD disclosures; 4) common AECD examples; 5) other considerations such as the necessity of functions, the interaction between AECDs and baseline calibrations, and specific risk-related aspects of functions; and 6) practical guidance for reviewing functions/calibrations and updating of AECD disclosures. Daimler has updated and will continue to update, as necessary, and redistribute these Guidelines to relevant employees.

These efforts foster general awareness of technical compliance issues, including AECD disclosure requirements and the prohibition of defeat devices; they do not, however, represent the entire control system for generating appropriate AECD disclosures, discussed in more detail in Section V.C.3, or for ensuring that defeat devices are not used. Furthermore, employees involved in the development and description of emissions controls can consult their peer network (including the tCMS Multipliers), Certification, and IL/P when they have questions regarding, for instance, the development of compliant emissions control systems or AECDs. In addition, the newly established Functional Group system provides guidance to all employees involved in the development of these functions, *see* Section V.B.4. Moreover, as discussed in Section V, Daimler employs various technical compliance and certification control measures that are specifically related to ensuring the accurate identification and justification of functions which should be disclosed as AECDs and preventing the development and use of defeat devices. This approach recognizes that the development of compliant emissions controls and AECDs is a multidimensional effort; training is merely one aspect of the oversight and guidance that is available to employees.

In addition to training employees, Daimler communicates the importance of tCMS with a wide range of internal promotional activities that ingrain tCMS in the broader organization.

These efforts include raising awareness of technical compliance among the entire Daimler employee base, target-group oriented communications, repeated communication by top management across various channels, and dozens of internal promotional initiatives in 2017 and 2018. See Attachment A: Daimler's Technical Compliance Communication Plan for details regarding planned promotional initiatives.

## **B. Consultation and Cross-Functional Decision-Making**

The second major pillar of tCMS is *consultation and cross-functional decision-making*. Daimler offers multiple points of contact and processes to provide support and guidance for employees regarding technical compliance matters. It has implemented an intertwined and effective consultation network throughout R&D, which consists of 1) the tCMS organization, discussed in Section II.A.; 2) tCMS Multipliers; and 3) Infopoint Integrity. In addition, Daimler has established a cross-functional decision-making process to consider complex technical compliance questions.

### **1. tCMS Multipliers**

R&D makes key technical decisions during the development of Daimler products and owns the risk related to such decisions. Daimler installed the tCMS Multiplier network in 2017 as a contact system for technical compliance in R&D, linking risk management and tCMS directly to the departments where technical decisions are made. The Multipliers serve as the first point of contact within R&D when an employee has a technical compliance question, concern, or conflict of interest. The Multipliers are persons of trust with natural authority—sometimes managers, sometimes experienced engineers. This system allows engineers to consult with other engineers. The Multipliers are not, however, supervisors and do not have disciplinary authority. This is by design; although Daimler expects its employees to report all misconduct, and provides a whistleblower system to do so, the Multiplier system is designed to encourage engineers to contact the Multipliers with difficult questions without fear of retribution. The tCMS Multipliers receive mandatory onboarding training related to technical compliance, and participate in monthly network meetings and periodic special trainings where they can exchange information and discuss lessons learned. Currently, Daimler employs approximately 110 Multipliers. The Multiplier network is implemented according to risk, and thus is currently focused on higher-risk areas such as emissions compliance. A specific tCMS Multiplier is mandatory for all departments with an elevated technical compliance risk exposure according to the tCMS Risk Assessment. The network will continue to grow to reflect the expanding scope of tCMS.

### **2. Infopoint Integrity**

Daimler provides “Infopoint Integrity” to its employees as an additional consultation resource and available reporting channel.<sup>9</sup> Infopoint Integrity is a hotline accessible to all employees, which serves as a point of contact for all integrity issues, including questions related to technical compliance. Infopoint Integrity works as follows: when a question is received, it is assigned to one of numerous categories, including potentially “technical compliance”; Infopoint

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<sup>9</sup> Infopoint Integrity employees are instructed to report cases of potential noncompliance to the BPO.



Integrity will then put the employee into contact with the relevant subject matter experts for technical consultation (including, potentially, relevant Daimler lawyers). In 2018, Daimler began emphasizing the use of Infopoint Integrity for inquiries regarding technical compliance and began utilizing employees trained in technical compliance in the Infopoint Integrity system.

### 3. Cross-Functional Decision-Making

Difficult and complex questions often arise during the product development process. Daimler utilizes cross-functional decision-making processes to resolve so-called “Clearing Cases,” which are questions or issues that:

- arise during product development; and
- are related to technical regulatory requirements or technical compliance-related questions; and
- require cross-functional decision-making across different departments.

Daimler employees may report potential Clearing Cases via tCMS R&D, Infopoint Integrity, tCMS Multipliers, and/or IL/P. All potential Clearing Cases are ultimately forwarded to tCMS R&D. Clearing Teams, comprising members from IL/P, tCMS R&D, and Certification, analyze and validate potential Clearing Cases, and decide whether the reported issue qualifies as a Clearing Case. If the Clearing Team determines that the issue is not a Clearing Case and escalation is unnecessary, it provides feedback to the relevant employee. If the reported issue qualifies as a Clearing Case, the Clearing Team escalates the matter to the Technical Compliance Committee (“TCC”) with a recommendation for further consideration and decision. The TCC, led by tCMS R&D, mainly consists of E2-level representatives from IL/P, R&D, Certification, tCMS R&D, Communications, and External Affairs. It is scheduled to meet at least monthly.

If the TCC cannot reach a decision, it escalates the matter to the Engineering Practices Board (“EPB”), which meets quarterly (or more frequently as needed). The EPB largely consists of E1-level representatives from IL/P, R&D, Certification, tCMS R&D, Communications, and External Affairs. If the EPB reaches no decision, the issue is escalated to a BoM-level committee. The decisions made at each step of this process by each committee are binding.

In 2019, Daimler introduced a “non-personal email address” (*i.e.*, a general mailbox not specific to an individual) that employees can use to pose questions regarding technical compliance.

These multiple advisory and decision-making functions provide ample opportunity for employees to raise and escalate questions and concerns regarding technical compliance. To avoid silos of information, clear communication processes ensure that issues and decisions flow to the relevant functions. All potential Clearing Cases are ultimately forwarded to tCMS R&D. Technical compliance decisions are typically made cross-functionally, bringing together engineers, lawyers, and certification personnel to ensure that all relevant experts have a stake in the decision-making process.

### C. tCMS Governance

The third key pillar of tCMS is *governance*. The main aspects of the tCMS governance element are 1) risk assessment and risk mitigation; 2) reporting and monitoring; and 3) tCMS controls.

#### 1. tCMS Risk Assessment and Mitigation

As described in Section III.E., Daimler conducts an annual Risk Assessment for its CMS. In 2017, Daimler adopted this methodology for technical compliance risks, creating a tCMS Risk Assessment that occurs annually. The tCMS Risk Assessment is designed to measure the technical compliance and environmental risk exposure of R&D departments, and identify the specific risks existing within each of those departments. Based on the results of the Risk Assessment, IL/P assigns responsibility for and monitors the implementation of risk-mitigating measures.

Run by a group within IL/P that collectively has a legal, compliance, and engineering background, and experience with R&D processes, the tCMS Risk Assessment provides a structured and systematic approach to assess the technical compliance risk exposure of departments within the scope of the Risk Assessment. As a first step, the IL/P group identifies which R&D departments are within that scope, *e.g.*, departments relevant to emissions, safety, and corporate adherence to environmental regulations. In 2019, approximately 340 departments fell within the scope of the tCMS Risk Assessment.

After identifying the relevant departments, the group within IL/P develops a survey relating to areas of responsibility and the tasks of respective departments. Multiple working sessions help to draft survey questions geared to measure relevant risk (*e.g.*, risks related to emissions and U.S. certification processes) among the various departments. Daimler undertook a pilot process in 2017 to validate the effectiveness of the survey questions, pursuant to which IL/P consulted with experts on a departmental basis to verify whether survey results reflected the risk exposure perceived by those experts. This analysis demonstrated a close correlation between expert-identified risks and the results of the survey. Survey questions were further refined as a result of this process. Daimler repeated this process in 2019 and will repeat this process on an annual basis. Additionally, the survey will be refined annually to incorporate lessons learned from the previous year, newly identified risks, and outcomes of the annual effectiveness evaluation, as well as other information sources, such as Corporate Audit reports.

After development of the survey, Daimler uses an IT tool that solicits survey responses from the leaders of all departments that are within the scope of the tCMS Risk Assessment. The survey, consisting of approximately thirty questions, is typically provided mid-year; recipients have six to eight weeks to complete the survey. Daimler also considers feedback regarding environmental compliance risks and suggested improvements provided via established consultation channels such as the tCMS multiplier network, and/or via the BPO. In 2020, Daimler will include in the tCMS Risk Assessment survey a statement inviting anonymous feedback through the BPO. Based on the this information, IL/P uses a predefined evaluation method to calculate the risk exposure of the relevant departments and assigns a risk rating (High, Medium, or Low) for each assessed department.



For any department assigned a “Medium” rating, IL/P and tCMS R&D conduct a manual review to determine whether any department should be elevated to “High” risk. Once the final levels have been determined, the results of the tCMS Risk Assessment are communicated to all evaluated departments. IL/P conducts face-to-face Risk Assessment review meetings with departments with “High” risk ratings to develop a more detailed understanding of how specific tCMS risks manifest in each department. As a result of these meetings, IL/P assigns mitigation measures and documents them in an IT tracking tool, which helps to ensure that these measures are consolidated and available for review for timely implementation. Daimler conducts sample checks of mitigation measures to evaluate the effectiveness of these measures and will annually update the tCMS Risk Assessment to improve the identification of risks and the completion of mitigation measures. Daimler convenes specific taskforces to address more urgent ad hoc risks that emerge outside of this standardized annual process.

In 2019, Daimler started to fully integrate the tCMS Risk Assessment into the Company’s overarching CMS Risk Assessment process to create a holistic view of all Company-wide compliance risks. This integration means that the tCMS Risk Assessment can utilize common IT tools, infrastructure, timelines, and management reporting obligations.

Beginning in 2020, in conjunction with each annual tCMS Risk Assessment, Daimler will determine the effectiveness of prior year Assessments and refine the following year Assessment based on this determination.

## **2. tCMS Monitoring and Improvement (Effectiveness Evaluation)**

Leveraging the same principles discussed in Section III.H. regarding the CMS Effectiveness Evaluation, IL/P employs a structured annual monitoring and reporting process to conduct an Effectiveness Evaluation of tCMS program elements based on predefined effectiveness criteria for each program element. These criteria are different for and tailored to each program element. For example, with respect to the cross-functional decision-making process, some of the criteria that inform the Effectiveness Evaluation are as follows:

- Whether a comprehensive clearing process for technical-compliance-relevant questions has been established;
- Whether the availability of these committees has been communicated to relevant employees;<sup>10</sup>
- Whether committees meet on a regular basis; and
- Whether decisions are documented and communicated to the relevant departments.

The monitoring process uses, among other things, interviews of relevant employees and self-assessments, and evaluation of feedback received through consultation channels such as the

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<sup>10</sup> Relevant employees receive mandatory training on the purpose of the clearing processes and the expectation that they utilize these resources. The tCMS training processes are also subject to an Effectiveness Evaluation.

tCMS multiplier network or via the BPO to verify that the tCMS program elements are effective. IL/P conducts these evaluations and reports the results at least annually to the Compliance Board, the Group Risk Management Committee, the BoM, and the Audit Committee of the Supervisory Board.<sup>11</sup> If an element is found to be ineffective, IL/P initiates measures to improve the relevant control. The responsible department then implements these measures as part of a continuous improvement process. If IL/P determines that an ineffective element could potentially endanger the entire tCMS, it triggers immediate emergency measures.

Beginning in 2019, the Effectiveness Evaluation evaluates, in part, whether control objectives, discussed *infra*, are being met.

### **3. tCMS Control Objectives**

In 2018, Daimler began implementing control measures to monitor the processes that help ensure a complete, accurate, and legitimate development process, and that help ensure the complete documentation of development results for certification in accordance with regulatory requirements. Those control measures seek to mitigate risks identified either by the tCMS Risk Assessment or by engineers and other employees on an ad hoc basis. IL/P conducts sample testing of the technical compliance control measures to provide independent, second-line verification. Current control objectives, which are still being implemented through these control measures, include the following:

- Relevant regulatory requirements are communicated to all relevant personnel.
- AECD disclosure-relevant software functionalities related to emissions are identified and will be tracked.
- AECD documentation-relevant software functionalities are correctly described and implemented.
- Regulatory compliance of all disclosure-relevant software functionalities and regulatory conformity of respective documentations.

Specific technical compliance and certification control measures help to implement these objectives, discussed in Section V. IL/P will reevaluate tCMS control objectives on an annual basis and will identify tCMS control objectives to monitor processes used for vehicle environmental compliance including detecting and disclosing AECDs and detecting and preventing defeat devices.

### **D. Supplier Integrity Management**

Daimler recognizes that its suppliers<sup>12</sup> are critical to fulfilling its commitment to conducting business in a compliant manner. Daimler therefore expects its suppliers to implement

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<sup>11</sup> In addition, bi-annual reporting informs the relevant departments of the status of tCMS program elements.

<sup>12</sup> These measures are generally intended to reach those suppliers which Daimler has a contractual relationship with and which directly provide to Daimler Emission-related software, Emission-related software calibrations,

an effective technical compliance management system. Daimler's tCMS (and the broader CMS) include key measures to mitigate the risk of misconduct by suppliers. Daimler has implemented and continues to enhance its business partner integrity management, *see* Section III.F., for technical compliance.

First, the Company systematically screens all of its suppliers on an annual basis. In addition to existing screening for criminal or environmental violations, in 2019, Daimler enhanced its screening process to identify suppliers that have potentially violated other regulatory requirements. Additionally, as of 2019, Daimler's Chief Compliance Officer participates in its Procurement Council (the Company's top management procurement business meeting) to further emphasize the importance of compliance in the procurement processes and organization.

In addition, Daimler typically furnishes suppliers with specification books, which provide a technical description of the parts, software, or service requested. In 2018, the Company added additional tCMS documentation requirements to its standard specification book, which contractually require the supplier to provide specific documentation regarding parts, software, and services, relating to regulatory conformity. Daimler can then use this documentation to create robust disclosures to relevant authorities.

The Company also includes standard terms and conditions in every business partner contract; these include general requirements of compliance with laws and regulations. In 2020, Daimler will enhance the general terms and conditions in its supplier contracts to include an explicit requirement to comply with technical regulations and laws, which include laws and regulations governing vehicle emissions and certification., and will undertake reasonable best efforts to include the requirement to comply with technical regulations into contracts entered into with suppliers. Daimler is also undertaking reasonable best efforts to include requirements in its suppliers' contracts, as well as in its suppliers' contracts with their own suppliers, to document or notify Daimler or Daimler's direct supplier in writing when the supplier determines that the supply of an Emission-Related part or performance of an Emission-Related service will result in Daimler violating U.S. or California vehicle emissions or certification regulations or laws, except where deficiencies under 13 C.C.R. §§ 1968.2 or 1968.5 may be permitted with appropriate disclosure to EPA or CARB. Daimler will also establish and maintain a list of suppliers that provide such parts or services that, to Daimler's knowledge, result in Daimler violating U.S. or California vehicle emissions or certification regulations or laws, except where deficiencies are permitted with appropriate disclosure to EPA or CARB. Daimler will also include on such a list suppliers that have been found by a governmental environmental agency to have violated U.S. or California vehicle emissions or certification regulations or laws in an administrative agreement, consent decree, settlement agreement, or other formal judgment or adjudication. This list will identify both the supplier and the individual Emission-Related part or service which resulted in the violation.

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or Emission-related hardware parts for use in vehicles intended for certification in the United States or California.

Relevant suppliers receive the Daimler-issued CAM, which contains information on several compliance topics, including Daimler's vision of technical compliance and an overview of tCMS, as well as its BPO. The CAM is available 24/7 via Daimler's Supplier Portal. In 2019, Daimler implemented an automatic CAM invitation process for every new supplier. The CAM currently appears in English, Spanish, and German. In 2019, Daimler began providing the CAM in additional languages.

In addition to providing the CAM, Daimler identifies suppliers of parts or services to "High-risk" departments (according to the tCMS Risk Assessment) and provides to those suppliers an additional specific tCMS awareness presentation. This presentation details Daimler's expectations regarding technical compliance and offers contact options for questions or concerns regarding technical compliance. Daimler has provided this presentation to twenty-five of twenty-five identified suppliers. Daimler has also conducted extensive, ongoing face-to-face working sessions with key suppliers regarding technical compliance.

In 2019, Daimler conducted an in-person workshop with key suppliers that provide products or services directly relating to compliance with U.S. or California emissions laws and regulations. This workshop detailed Daimler's expectations regarding technical compliance. In 2020, Daimler will establish compliance-related communications and escalation processes with key suppliers that provide products or services directly relating to compliance with U.S. or California emissions laws and regulations, and will develop and provide a platform and guidance for these suppliers to evaluate their own technical compliance systems and emission-related development processes. Finally, beginning in 2019, Daimler developed and began providing specific web-based training on U.S. emissions regulations to key suppliers that provide products or services directly relating to compliance with U.S. emissions laws and regulations.

## **V. Technical Compliance and Certification Control Measures**

Based on the control objectives discussed in Section IV.C.3., Daimler has developed technical compliance and certification control measures, which both prevent and detect undisclosed AECDs and defeat devices, and ensure that AECDs are properly disclosed and tracked. This Section outlines these control measures, focusing first on those measures aimed at better understanding and communicating certification requirements, which influence development, certification, and lifecycle management. Then, this Section discusses measures designed specifically for each of these three stages.

### **A. Communicating and Understanding Regulatory Requirements**

#### **1. Regulatory Monitoring Meeting**

Daimler holds quarterly, cross-functional Regulatory Monitoring Meetings for the purpose of aggregating news on emerging regulations and providing one consolidated source of information that is distributed on a management level within R&D. If questions regarding how to interpret or approach a rule, regulation, or situation are raised, Certification initiates steps for clarification, which include forwarding the question to the TCC, consulting with IL or, even, where necessary, consulting with regulatory authorities. This process allows for a systematic screening, consolidation, and communication of relevant information.

In the fourth quarter of 2018, Daimler held initial pilot-level Regulatory Monitoring Meetings. Since then, the Company has continued to evaluate the structure of Regulatory Monitoring Meetings to enhance their efficacy, and it is implementing an IT-platform to support them further. Formal launch of regularly scheduled Regulatory Monitoring Meetings occurred in the fourth quarter of 2019.

Information regarding new or revised regulations or regulatory guidance is distributed via the Regulatory Monitoring Meeting platform to R&D, which thus centralizes new regulatory information in one location.

## **2. Enhanced Regulatory Database**

Daimler employs databases to consolidate and communicate automotive regulatory requirements. First, it collects and publishes regulatory requirements in a Daimler-maintained database, Automotive Legislation Online (“ALO”), which is available both internally and to external subscribers (*e.g.*, other OEMs and suppliers) through a website on the Daimler network. Updates are based on continuous regulatory screening by Certification and information from the relevant markets, and are communicated to internal and external customers through notifications and newsletters. Furthermore, Certification and R&D maintain an internal database that provides supplemental information on regulatory requirements, including summarized extracts of regulations focusing on technical aspects.

In the future, Daimler will implement a next generation regulatory database (the “Enhanced Regulatory Database”), which will consolidate the aforementioned databases along with regulatory requirements, supplemental information, internal engineering guidelines (TCC/EPB decisions), and regulatory authority guidance. It will also provide improved navigability and ease of access for engineers (*e.g.*, via improved topic-related tagging). Certification, which will oversee the content and management of this database, will add new information on a rolling basis; this may include developments from the Regulatory Monitoring Meetings. Daimler has initiated conceptual design and implementation of this database. Full implementation is planned to occur in 2021.

## **B. Controls on the Development Process**

Daimler has implemented the following measures related to the software development process to help ensure compliance with regulatory requirements and internal Daimler standards.

### **1. Systematic Derivation of Technical Specifications**

Daimler will establish an enhanced process for systematically deriving technical specifications from regulatory requirements for product compliance. The systematic derivation of technical specifications is intended to take the regulatory requirements for vehicle emissions and certification compliance and turn them into parameters or limits for engine or aftertreatment performance, which are then applied to the design of software. This derivation of technical specifications will be a mandatory step in the development of light- and medium-duty powertrains.

## 2. Software Compliance Guide

The Software Compliance Guide, attached hereto as Attachment D, provides overarching themes and guardrails for the development process, and reiterates Daimler's fundamental integrity and compliance principles. Developed jointly by legal and R&D experts, the Guide focuses on technical compliance topics (including emissions and fuel economy regulations). The goal is to familiarize developers with the general legal and internal standards that govern the design of a specific function before functional development begins. Developers also use the Guide as a reference tool when reviewing a proposed software change.

The Software Compliance Guide contains guidance on five dimensions: information security, product safety, environmental compliance, intellectual property, and product conformity. With respect to environmental compliance, Daimler has issued guidelines for the topics of emissions, OBD, fuel economy/CO<sub>2</sub>, and noise. Guidelines for emission-relevant software functions state:

- Software functions of emission-relevant vehicle systems must be designed in such a way that they ensure the protection of health and the environment.
- Software functions must meet legal requirements for emissions without causing other mandatory requirements (*e.g.*, such as OBD or noise emissions) not to be met. This must be ensured, even if it is at the expense of comfort or performance requirements.
- Software functions must be designed to be independent of test cycles and the dynamometer and no direct or indirect detection of test boundary condition must be made.
- Software functions must be developed and designed based on physics.
- Software functions must be designed in such a way that counters, timers (*e.g.*, time after engine start), integrated parameters, memory elements or other parameters with potential test cycle relevance are only used for absolutely necessary and justifiable changes in system behavior—if necessary, consult certification and technical compliance departments before application.
- Software functions must, as far as technically possible, be reversible with regard to activation and deactivation conditions, so that, for example, switching back and forth between different operating modes is ensured.
- Software functions must be designed in such a way that the effects of the measures are physically reasonable and justifiable.
- Certification-relevant documents must be correct, clear and complete, and adhere to all legal requirements.



- Possible effects of software changes on certification-relevant documentation are to be considered and adjustments in the corresponding documents are to be made and coordinated with Certification in the run-up to the software implementation.
- Software functions, including their calibration, must be logically comprehensible to a third-party expert.
- For software functions for which admissibility is justified on the basis of their occurrence in legally prescribed test procedures, evidence must be available in the form of test data or engineering justifications.

The Software Compliance Guide supplements training and provides practical orientation for actual day-to-day application. Developers may use this Guide at the earliest stages of software development, and throughout, to determine whether a function under consideration complies with the guidelines outlined. It also informs the decisions of Functional Group Leaders, *see* Section V.B.4.

The Software Compliance Guide was finalized and distributed to R&D employees in the first quarter of 2019. Each year Daimler will update the Guide as necessary based on feedback from software developers and compliance experts, as well as decisions by the TCC/EPB and feedback from regulatory authorities. The Company has assigned responsibility for updating various chapters in the Guide to experts (most of whom are in R&D) who will proactively integrate other expert and authority feedback. Daimler will provide the Software Compliance Guide to R&D employees on an annual basis. The Software Compliance Guide will continue to require that all software not detect or respond in any way to United States or California test cycles or test cycle parameters and that all software be designed independent from any such regulatory test cycles and test cycle parameters.

The Software Compliance Guide includes contact person information. Therefore, if an engineer has questions regarding how to implement the Guide, or whether a function complies with the Guide, he or she is able to reach out directly to that contact person for guidance.

### **3. Identification and Tracking of Disclosure-Relevant Control Parameters**

Daimler will implement a process to identify and track all disclosure-relevant control parameters (*e.g.*, EGR rate) to ensure that any changes that materially affect such control parameters are reflected in revised or updated AECD disclosure documents as required by U.S. and California AECD disclosure laws, regulations, and guidance. The Company will maintain an inventory of these control parameters and will continuously revise and update this list.

This process will help ensure that developers consider the purpose and justification of disclosure-relevant functions early in the development process, before AECD documentation is generated. It will also ensure that these disclosure-relevant control parameters are consistently documented and tracked.

#### **4. Compliance Check by Functional Group Leaders**

Daimler established the new role of Functional Group Leader and is in the process of implementing a tool-supported compliance check by Functional Group Leaders to assist with ensuring that software changes and proposed new functions developed within Daimler meet compliance standards. The powertrain department within R&D divides and groups together software functions into Functional Groups, which it then assigns to a Functional Group Leader. The Functional Group Leaders are “mentors”—experienced engineers with expertise around certain functions—who serve as an expert contact for questions, assist with data checks, and confirm compliance of functionalities. Functional Group Leaders largely exist outside of regular reporting lines, so function developers do not generally report to their Functional Group Leader. Daimler chose this structure to facilitate frank and candid discussions of challenging engineering concepts and allow for technical review by an engineer with in-depth knowledge. There are currently approximately 230 Functional Group Leaders identified in the R&D powertrain department.

Functional Group Leaders review proposed changes to software in the software definition phase of a “VA cycle.” Perhaps most importantly, Functional Group Leaders conduct a compliance check for all software change requests and proposed function developments within their Functional Group. The Functional Group Leaders confirm that proposed software changes and new function developments adhere to the Software Compliance Guide. Functional Group Leaders may reject proposed changes/new function developments or send them back to the developer for review. This check confirms that proposed software changes and new function developments are examined by, at a minimum, two engineers.

The Functional Group system safeguards compliance through a formal review process for all software changes and new function developments, provides for early identification of potentially impermissible functions (at the start of every “V cycle” in the software development process, before implementation), and contributes to consistency across projects (*e.g.*, functions used in four-cylinder engines and six-cylinder engines). Establishment of the Functional Group system began in 2019, and will continue to be further established and implemented in 2020 and 2021 to cover ECU, TCU, CPC, and DCU functions in light- and medium-duty vehicles intended for certification in the U.S. or California.

#### **5. Cascaded Software Confirmation and Approval**

Proposed software passes through a rigorous testing regime before it is released for industrialization. The approach, which has historically been used by Daimler and throughout the industry, is referred to as the “VA cycle.” The “V” portion of the cycle is the phase in which the software is developed. This includes the creation of the software itself and the implementation of changes into that software. The “A” portion of the cycle is where the software is tested in operation, either on a testing bench or as part of a test drive. Prior to software industrialization (*i.e.*, before the software is implemented in pre-production or production vehicles), cascaded approvals occur for all software and calibration developments. These cascaded approvals require signoff from at least three levels within the Company.



## **6. Software Screening**

### **a) Screening of Functions for Review**

Daimler uses screening processes to analyze software functions, determine whether such functions should be used, and, if necessary, identify justifications for the use of a function—or, alternatively, determine that a function is not justified and therefore cannot be used. This approach—identifying functions that need further review—helps to ensure a consistent, reproducible, and objective evaluation of functions across the standard assessment criteria, and enables clear documentation of the process. If, at the end of this process, there is no acceptable justification for a function, that function is not used in the software.

Daimler used a Manual Funnel Process for the MY17 Sprinter in the U.S. market applying filter criteria developed with outside counsel. This process will be used in the future when necessary on an on-demand, ad hoc basis as a complement to the Tool-Supported Screening Process, which Daimler is currently implementing to improve efficiency. The manual funnel process will be used for the introduction of new platform diesel vehicles to the U.S. market. The Tool-Supported Screening Process will use function-signal combinations (for example, environmental pressure as an input to an aftertreatment SCR dosing function) to identify functions that require further evaluation, creating a risk-based indication of areas warranting further review. The tool contains a range of function-signal combinations that could raise regulatory concerns, and it can scan HEX and A2L files against those combinations to determine if they are present in a software. If the tool detects a function-signal combination that could be of concern, that function is further assessed within R&D using specific criteria. If necessary, the identified function may be submitted as a Clearing Case and assessed as part of the cross-functional decision-making processes.

Through this process, the Company may assess whether a function is a permissible AECD, and may also assess whether to implement the function even if it may be permissible. If a function is identified that may be impermissible, the function can be removed, deactivated, or changed, or the Company may directly request agency guidance regarding implementation of the function. The Tool-Supported Screening Process is used in later stages of software development, when the software is closer to release. This tool is currently under development and has been tested for use on specific engine types. The Tool-Supported Screening Process will be used from March 31, 2021 onward to screen all new U.S. powertrain projects to identify software functions that may qualify as AECDs.

### **b) Tool-Supported Calibration Check**

Daimler also uses a Tool-Supported Calibration Check to identify potential issues with specific software calibrations in light- and medium-duty vehicle ECUs, TCUs, CPCs, and DCUs, as opposed to functions. The Tool-Supported Calibration Check reviews ECU and TCU calibration data to determine if certain functions have calibrations that are outside of a parameter range that is known to be reasonable and permissible. The Tool can also compare calibrations between software versions to isolate changes that were made and can compare calibrations between different engines. This tool will also perform a complete check for any functions previously flagged for additional analysis.

The Tool performs conformity checks by analyzing labels to ensure they fall within certain predefined calibration value ranges, testing for minimum and maximum values and under- or overruns, testing for active and inactive functions, and testing for certain calibration curves.

This Tool is used in the last “V” portion of the “VA cycle,” prior to industrialization. Daimler has used this Tool to check calibrations in diesel engines in the U.S. market since the second quarter of 2018. And it was used to conduct TCU calibration checks for select TCUs in the fourth quarter of 2018. In the first quarter of 2019, Daimler began using the Tool to conduct calibration checks of select gasoline engines. Daimler will continue improving this Tool to cover additional control units and extend its use to gasoline vehicle software. This Tool is being used to screen the calibrations of ECU and TCU software of all gasoline and diesel vehicles intended for certification as light- and medium-duty vehicle models in the United States and to screen ECU- and TCU-relevant software changes (running changes or changes implemented via field measures) to light- and medium-duty diesel vehicle models issued Certificates of Conformity or Executive Orders. Beginning with MY2021, Daimler will use the Tool-Supported Calibration Check to screen the calibrations of DCU and CPC software of all vehicles intended for certification as light- and medium-duty diesel vehicle models in the United States and will use it to screen the calibrations of CPC software of two light- or medium-duty gasoline vehicle models intended for certification in the United States. Beginning with MY2022 Daimler will use the Tool-Supported Calibration Check to screen the calibrations of CPC software of all vehicles intended for certification as light- and medium-duty gasoline vehicle models in the United States. Beginning with MY2022, Daimler will use the Tool-Supported Calibration Check to screen DCU and CPC-relevant software changes (running changes or changes implemented via field measures) to vehicles issued Certificates of Conformity or Executive Orders as light-duty and medium-duty diesel vehicles.

## **7. Testing and Verification Process**

In addition to using the tools and measures set forth above, tCMS R&D may order additional testing, which may include standard or non-standard test cycles, to investigate any potential issues or concerns. When such a test is performed, IL/P, Certification, and tCMS R&D determine what criteria will be acceptable for any specific test result based on the issue or concern that triggered the testing. This is based on the nature of the test and the nature of the inquiry. A test that shows that a vehicle is out of compliance with a mandated standard is never acceptable. Once testing concludes, tCMS R&D, Certification, and any relevant functional departments meet to discuss the results. This meeting determines whether the software being tested is in compliance with regulatory and internal standards and whether to conduct any additional follow-up or clarification. Next, Certification and tCMS R&D verify the test results. This includes a review of the aggregated test results and the conclusions reached in the aforementioned prior meeting with the functional department leaders. A second review then takes place. This review involves representatives from IL and can include an additional detailed review of the results and data, if appropriate. Finally, representatives from IL/P, Certification, and tCMS R&D conduct a discussion workshop. This group reaches the ultimate decision about how to proceed. Feedback is provided to R&D for enhanced software development.

This on-demand testing and verification process occurs after industrialization and may occur throughout the vehicle lifetime.

### **C. Controls on the Certification Process**

Controls on the certification process also work to identify possible undisclosed AECDs, or even defeat devices, and safeguard the accuracy of submissions to regulatory authorities.

#### **1. Off-Cycle Testing**

Currently, Daimler conducts off-cycle testing, encompassing both PEMS and dynamometer testing, to demonstrate off-cycle tailpipe emissions and screen for undisclosed AECDs and defeat devices in U.S. light- and medium-duty diesel vehicles. This testing began in MY2017 for medium-duty diesel vehicles (Sprinter) and continues to be applied for new diesel vehicle certifications. The purpose of the off-cycle testing described here is to screen for defeat devices or undisclosed AECDs. Daimler will continue to conduct the PEMS and off-cycle dynamometer testing reported in Appendix A to the MY2017 OM642 Sprinter AECD documentation for new light- or medium-duty diesel vehicles issued Certificates of Conformity or Executive Orders, through and including MY2023.

Daimler also conducted PEMS testing to demonstrate off-cycle tailpipe emissions and screen for undisclosed AECDs or defeat devices on three vehicles certified as light- or medium-duty gasoline Test Groups per Model Year for MY2021, and will conduct this testing through and including MY2024, generally selected based on sales volume. Daimler has and will continue to submit the PEMS testing emissions data to the certification departments at EPA and CARB and will publicly post PEMS reports. This testing is conducted by a team located in Los Angeles, California, independent from R&D. Certification organizes and facilitates this testing process and also reviews the test results.

#### **2. Emission-Related Parts List**

Based on the regulatory definition of “emission-related part” and associated regulatory guidance, Daimler maintains a list of emission-related parts in light- and medium-duty vehicles. The emission-related parts list is used to ensure complete certification reporting, including satisfying the requirements of the Common Application and other reporting obligations, such as the requirement to report running changes.

Certification and R&D currently review and update the list on an ad hoc basis, such as in response to technology updates or regulatory developments. In MY2019, Daimler began to benchmark best practices by reviewing parts lists in the warranty booklets of other industry peers. This comparison showed that Daimler’s parts lists generally conform to its peers’ parts lists.

Daimler conducts an annual review to ensure that the parts list complies with applicable regulatory guidelines, while incorporating technological developments in order to maintain a comprehensive parts list. Daimler will continue to conduct this annual review and update. Daimler will add parts based on technological advances (*e.g.*, EVs); assess whether non-powertrain controllers should be added to the scope (*e.g.*, HVAC, battery); and expand the

criteria for inclusion to include parts related to off-cycle GHG credits. In evaluating potential updates, Certification will also consider, among other things, OBD relevance, GHG off-cycle credit relevance, and benchmarking of industry best practices by reviewing the parts lists that are found in the warranty booklets of its peers.

### **3. AECD Documentation, Approval, and Review**

The process for developing AECD disclosures for any particular test group is iterative and seeks to identify all potential AECD functions and disclose such functions consistent with regulatory requirements and internal standards. R&D and Certification execute this process, with oversight and involvement from IL.

Specifically, Certification provides the AECD disclosure document format to R&D, which then provides a first-draft AECD disclosure using the provided template. Certification reviews this draft and provides feedback (due diligence questions and clarifying edits) concerning all outstanding issues for the particular AECD disclosure draft. R&D implements these revisions, and this process repeats as necessary, with question-and-answer exchanges throughout. At the end, Certification issues a draft to IL for consultation and evaluation. At that point, IL, in collaboration with external legal experts when necessary, also provides its due diligence questions and clarifying edits concerning all outstanding issues with the particular document; IL engages in a similar iterative process with Certification and R&D. Once all pending questions are closed, Certification prepares the final disclosure document, which then is provided to R&D for signoff.

To “sign off” on the AECD disclosure document, the department and development groups involved in the creation of the relevant functions must diligently review their respective sections again and confirm the following in their respective areas of the software: 1) the disclosure complies with the relevant regulatory provisions and is complete, accurate, and not misleading; and 2) to the best of the reviewer’s knowledge following a due diligence inquiry, there are no indications of a) defeat devices or undisclosed AECDs or b) efforts to manipulate functions, data points/parameters, or relevant tests and corresponding explanations in such a way that they are represented to the regulatory authorities incorrectly or misleadingly. Making the employees responsible for relevant functions certify their full and accurate disclosure helps to ensure true and complete AECD documentation. This also offers a final opportunity for management review. Once the subcertification process is complete, Certification uploads the final document to EPA and CARB via Verify and DMS, respectively.

In addition to the process used above to check the accuracy and completeness of AECD documentation, Certification also has the ability to request on-demand, ad hoc checks for technical and legal correctness, thereby providing additional assurance regarding disclosures where there is a question about a particular vehicle or technology. When this step is taken, IL/P and tCMS R&D will independently review AECD disclosures prepared under the process described above and, as needed, evaluate functions and calibrations underlying disclosed AECDs. This process was used for MY2017 OM642 Sprinter AECD disclosure documentation as well as for the proposed GLK update.

Finally, Certification has implemented a process whereby it checks ECU datasets to ensure that calibration values match the values disclosed in AECD documentation for both gasoline and diesel vehicles. This serves as an independent verification of the documented calibration values. Certification selected a MY2020 gasoline test group as the pilot for this additional accuracy check and implemented the use of this check in MY2021.

#### **D. Lifecycle Management Control**

In addition to the development and certification control measures listed above, Daimler has implemented lifecycle management control measures to help ensure that changes made to the vehicle certified configuration are properly tracked and disclosed to regulatory authorities.

##### **1. Tracking and Recording of Certified Configuration**

Tracking and recording of the certified configuration, i.e., the hardware and emission-related software configuration of the Emissions Data Vehicle (“EDV”) (as tested for compliance with U.S. emissions standards), helps ensure that any changes to the certified configuration are duly captured. The process begins when a vehicle is designated as an EDV by Certification. Once Certification constitutes a test group, R&D suggests the applicable EDV for the test group, and upon confirmation from Certification, R&D then provides tire data, weights, and worst-case drive mode to Certification. Furthermore, R&D provides a part number checklist for emissions relevant hard- and software. Based on that information, Certification orders the workshop to check the hardware and software parts to ensure that the physical test vehicle is configured as intended prior to initiating a software freeze, which occurs before mileage accumulation. Subsequent to the freeze, any proposed hardware or software changes to the certified configuration must be approved by Certification and reported through the running change reporting process to EPA and CARB.

Daimler developed additional safeguards that are being implemented with MY2021: Certification will retain certified software configurations in a centralized database and a window sticker will designate vehicles used for certification testing, which will help to prevent any changes to the certified configuration of that vehicle.

##### **2. Software Change Process**

Daimler has implemented a software change process to ensure that software changes to emission-relevant ECUs in vehicles issued Certificates of Conformity or Executive Orders are catalogued and reported to the agencies. Certification has a veto right for any proposed software changes to ECU, TCU, DCU, and CPC software. That is, once a vehicle is in production, any proposed software change to these control units requires explicit approval from Certification, which also is in charge of notifying regulatory authorities of such changes as required by the regulations.

The process begins when a developer requests a software change. A cross-functional review team reviews the corresponding change request form for regulatory conformity and plausibility. The software change, depending on the content, may be challenged by Certification with additional requests for evidence and details. In addition to the above plausibility check, in some cases, Certification conducts a further detailed analysis on randomly selected change

requests to ensure that the contents of the change (through a comparison of the datasets before and after the change) are reflected in the description of the requested change. Implementation of this dataset check is ramping up; it has been implemented for 100% of all proposed software changes to ECUs, TCUs (NAG3, 7-DCT, and 8-DCT), DCUs, and CPCs in light-duty vehicles issued Certificates of Conformity or Executive Orders, and will be conducted on proposed software changes to ECUs, TCUs (NAG3, 7-DCT, and 8-DCT), DCUs, and CPCs in medium-duty vehicles issued Certificates of Conformity or Executive Orders by the end of 2020.

If Certification has concerns about a proposed change, it can ask R&D to provide further detail for clarification. If Certification has concerns with the rationale or explanation provided by R&D, it can veto any proposed changes. This process creates transparency by ensuring traceability of proposed changes, and accountability on behalf of Certification and the developers who are proposing the changes. This is yet another instance of Daimler's four-eyes principle, increasing the number of responsible employees who critically examine and challenge proposed software changes.

### **3. Field Software Control**

Daimler will continue to enhance its lifecycle management controls to ensure only approved and certified software exists on vehicles in production and in the field. To this end, the Company will enhance its product documentation to allow for direct identification of software and functions that have been implemented on a vehicle-by-vehicle basis. In 2019, Daimler began conducting sample checks of the software configurations of three vehicles certified as light- or medium-duty gasoline models in the field in the United States to determine whether such software configurations are consistent with each vehicle's certified configuration and confirm that any changes to the certified configuration were made in accordance with regulatory requirements. Beginning with MY2020, Daimler will randomly select and conduct sample checks of vehicle software in the field in the United States to determine whether such software configurations are consistent with each vehicle's certified configuration as reported to EPA and CARB, and to confirm that any changes to the certified configuration were made in accordance with United States and California regulatory requirements.

## **VI. Internal Audit (Corporate Audit)**

Daimler uses the classic "three lines of defense" model for corporate risk mitigation. This model is comprised of the following elements: 1) relevant management; 2) the various risk control and compliance oversight functions established by management; and 3) independent assurance. At Daimler, Corporate Audit ("CA") constitutes this independent third line. CA provides Daimler's Supervisory Board and senior management with comprehensive assurance, rooted in the highest level of independence and objectivity possible for an internal function.

Independence, including organizational independence, flows from direct and unrestricted access to senior management and the Supervisory Board. That is reflected in the Chief Audit Executive's ("CAE") reporting lines to members of the Board of Management and the Audit Committee of the Supervisory Board. Furthermore, this fundamental reporting principle is perpetuated throughout all hierarchical levels in CA, preventing the CA organization from being



subject to external influence on all levels. The Audit Committee ultimately approves CA's annual budget, which CA develops.

The Corporate Audit Charter, attached hereto as Attachment E, signed by the Chairman of the BoM, the BoM member for IL, and the CAE, stipulates the authority of CA to conduct audits by comprising all necessary and relevant fundamental prerequisites for a professional audit function. These fundamental prerequisites for a professional audit function comprise of independence, objectivity, avoiding potential conflicts of interests, unrestricted authority to access all relevant information, and unrestricted resources. A measure set to ensure/enforce compliance with the fundamental prerequisites constitutes the comprehensive audit standards and single measures such as engagement training to perform audits without any quality compromises, reporting of any foreseeable potential conflict of interest to CA management, a one-year cooling-off period for new auditors, a professional on- and off-boarding process, regular training on audit ethics and compliance, and avoiding any operational duties.

The CA Charter grants CA the authority to access all relevant corporate information, thereby giving CA unrestricted access to all Daimler functions, records, property, IT systems and personnel. In addition, the CA Charter gives CA the untrammelled ability and authority to independently allocate resources, set review frequencies, select subjects for upcoming audits or investigations, determine scope of work, and apply the techniques necessary to accomplish its audit objectives, *e.g.*, conduct detailed analysis directly in IT systems with auditor access or perform interviews with relevant personnel. Importantly, these rights apply fully to all majority-owned Daimler entities (and extend to other entities/parties on a contractual basis).

#### **A. Corporate Audit's Role**

CA's assurance activities safeguard corporate assets, support the mitigation of Daimler's compliance risk exposure, and assess internal controls and processes with respect to compliance with applicable laws and regulations, as well as internal and external policies and guidelines. To accomplish these goals, CA employs a systematic, disciplined approach to evaluating and improving the design, effectiveness, and efficiency of all applicable corporate processes in the Company's businesses. CA develops and presents an annual audit plan in advance each year to the BoM and the Audit Committee of the Supervisory Board. During the course of the year, CA updates the BoM and the Audit Committee on its work regularly.

Leveraging a sophisticated and detailed annual risk assessment process, the annual audit plan takes into account various information sources, in particular risks and control concerns raised by Daimler's management in risk assessment interviews. CA reserves the right to reprioritize work and conduct ad hoc reviews if urgent, high-risk topics emerge during the course of the year. The audit plan regularly reflects technical and environmental compliance issues like emissions certification and homologation processes and parts/system/software-release processes.

CA staff is made up of a variety of interdisciplinary teams of comprehensively trained and highly qualified professionals. The composition of each team is conducted with consideration of the specific audit topic to ensure the appropriate specialists are allocated.

Employing its standard audit approach, CA prepares a comprehensive report for each audit conducted, including findings and corrective measures, along with clear responsibilities and deadlines for each corrective measure. CA tracks the implementation of corrective measures. It also regularly performs follow-up audits for issues identified in process audits and special reviews to verify the effective implementation of corrective measures. Clear management responsibilities for remediation helps ensure their execution and management commitment. Audit findings to which CA in its sole discretion assigns higher risk ratings, based on Daimler's standard methodology, receive more senior management attention—risks classified as “High” require implementation confirmation from an E1; “Medium” require at least E3 confirmation or higher. Of course, CA retains the right to escalate any issue to the BoM or Supervisory Board, at its discretion.

## **B. Post Settlement Audit Team (“PSAT”)**

CA already audits technical compliance processes and topics. These activities consider the general audit standard IDW PS 980 and other relevant standards, by examining tCMS's structure, implementation, and effectiveness, and is adopted considering new process developments. The relevant categories include compliance culture, objectives, risks, program, communication, monitoring, and improvement. Drawing upon its auditors who have experience with technical R&D topics as well as in-depth knowledge of Daimler's R&D processes, CA validates the design and effective implementation of relevant technical processes.

Pursuant to Paragraph 32 of the Consent decree, CA will continue to monitor the successful implementation and operation of tCMS through audits conducted by the PSAT. In particular, the Audit Plans in total will be designed to provide an overall assessment of the tCMS's design and implementation status, as well as the effectiveness of relevant tCMS processes in the respective operational business areas. Audits related to the effectiveness of relevant tCMS processes will include, but not be limited to, controls related to the following technical focus areas:

- The software development process, focusing on R&D powertrain, covering the software development and implementation process from the design phase to release.
- The implementation and effectiveness of global emissions certification processes.
- Product-related interfaces to identify certification-relevant risks, including examination of product-related components and their interfaces with other systems, considering areas where this interaction could impact certification.

All audits will be conducted based on approved Audit Plans and according to CA's standard audit procedures. Every audit will start with an audit notification to the relevant management. Then, a request for information will be submitted to the relevant business segment prior to the start of the on-site fieldwork phase. The response to the information request is used for preparation of the audit fieldwork and to refine the scope of the audit; this refined scope is reflected in an audit work program. The audit work program will include the audit objectives, procedures, anticipated underlying risks, and reference to relevant policies, guidelines, or



standards to be considered in assessing the controls in scope. During the audit fieldwork phase, auditors will, among other activities, review relevant documents and process materials, perform interviews, conduct detailed analyses, and conduct sample testing. Any potential issue identified during fieldwork will be documented and transparently discussed with relevant management. All issues identified will appear in a comprehensive audit report. The audit report is issued after a comprehensive review of the audit documentations and the report itself, following a recognized and certified standard audit approach.

### **C. CA Resources Dedicated to tCMS**

To carry out these audit activities, CA draws resources from a large, robust pool of skilled professionals and will dedicate these resources as required. As described in Paragraph 32 of the Consent Decree a dedicated PSAT will be established.

The PSAT will consist of experienced professionals<sup>13</sup> with deep technical expertise, a strong scientific educational background with focus on mechanical and electrical engineering as well as related fields of expertise, extensive experience in conducting second-line/compliance process-related audits, and a detailed understanding of Daimler technical processes and products. Their experience includes working with Daimler R&D personnel and evaluating the Company's R&D processes, certification activities, and software development. These resources include two Senior Managers as audit team leads with longstanding relevant work experience, comprehensive audit experience, and special expertise and knowledge in fields like certification, regulatory affairs, and quality management. The PSAT will be led by an E2-level team leader.

In addition, the PSAT may utilize case-specific internal technical experts and external technical consultants as necessary to complete its work effectively.

## **VII. Third-Party Review**

In June 2018, the BoM decided to retain a "Big Four" auditor to conduct an external evaluation of Daimler's CMS for anti-corruption and technical compliance pursuant to a German assurance standard for compliance management systems. For technical compliance, Daimler is one of the first major German enterprises to initiate such an external evaluation. The evaluation will assess the design, implementation, and operating effectiveness of CMS and tCMS and identify areas for potential enhancement at all levels of the Company. Daimler is fully committed to implementing any proposed enhancements. The Compliance Board will adopt recommendations or lessons learned to further enhance its compliance programs.

The anti-corruption evaluation started in October 2018 and was successfully completed in 2019; the technical compliance evaluation, which focuses in particular on emissions and certification, began in the first quarter of 2019. The tCMS evaluation is projected to be completed in 2020.

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<sup>13</sup> This dedicated team will include the existing R&D audit department with its extensive experience auditing technical R&D topics.

## **VIII. External Communication of Compliance Efforts**

Daimler regularly communicates its compliance activities using various channels, including its Annual Report, the Sustainability Report, and the Daimler website. Over the past ten years, the Daimler Sustainability Dialogue has served as an effective platform for constructive discussions between Daimler and stakeholders, from the political and scientific communities to society as a whole. Given the new opportunities and challenges facing the automotive industry, this discussion is more important today than ever before. Furthermore, E1- and E2-level managers participate in several compliance-focused initiatives, including the UN Expert Group Meeting regarding Whistleblowing and the German Forum Compliance & Integrity (NGO).

By the end of the second quarter of 2020, Daimler intends to expand its external compliance communication efforts, including by providing a more detailed description of its compliance activities on its website. It also addressed technical and environmental compliance as a key topic at the November 21, 2019 Daimler Sustainability Dialogue, which was hosted by BoM members.

## **IX. Implementation and Monitoring Office**

Daimler has established a dedicated Implementation and Monitoring Office within IL to support and track the implementation of the compliance measures and initiatives included in this Compliance Operating Plan and Section VII of the Consent Decree.

ATTACHMENT A

# DAIMLER

Communication plan: Communication Measures Technical Compliance &  
Technical Integrity @RD 2020

COM/C



## Communication plan tCMS and TINT@RD – 1st half year 2020\*

Due to the COVID-19 pandemic, short-time working in most departments.

[illegible]

# Communication plan tCMS and TINT@RD – 2nd half year 2020\*

Activity	July				August				September				October				November				December						
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Social Intranet																											
Articles Social Intranet																											
Pocket Guide																											
Tone from the Top Measures																											
Posters																											
Films																											
Events																											
tCMS Skype																											



# DAIMLER

Communication plan: Communication Measures Technical Compliance &  
Technical Integrity @VAN 2020

COM/C



# Communication plan tCMS and TINT@VAN – 1st half year 2020 \*

Due to the COVID-19 pandemic, short-time working in most departments.

Activity	January					February					March					April					May					June				
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26				
Social Intranet																														
Articles Social Intranet																														
Pocket Guide																														
Tone from the Top Measures																														
Posters																														
Films																														
Events																														
tCMS Skype																														

Daimler AG \* Activities and deadlines are presumptive and depend on deliveries and the environment.

Communication Plan Technical Compliance & Technical Integrity @VAN | COM/C | 01.07.2020

# Communication plan tCMS and TINT@VAN – 2nd half year 2020\*

Activity	July				August				September				October				November				December						
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Social Intranet																											
Articles Social Intranet																											
Pocket Guide																											
Tone from the Top Measures																											
Posters																											
Films																											
Events																											
tCMS Skype																											

ATTACHMENT B

DAIMLER

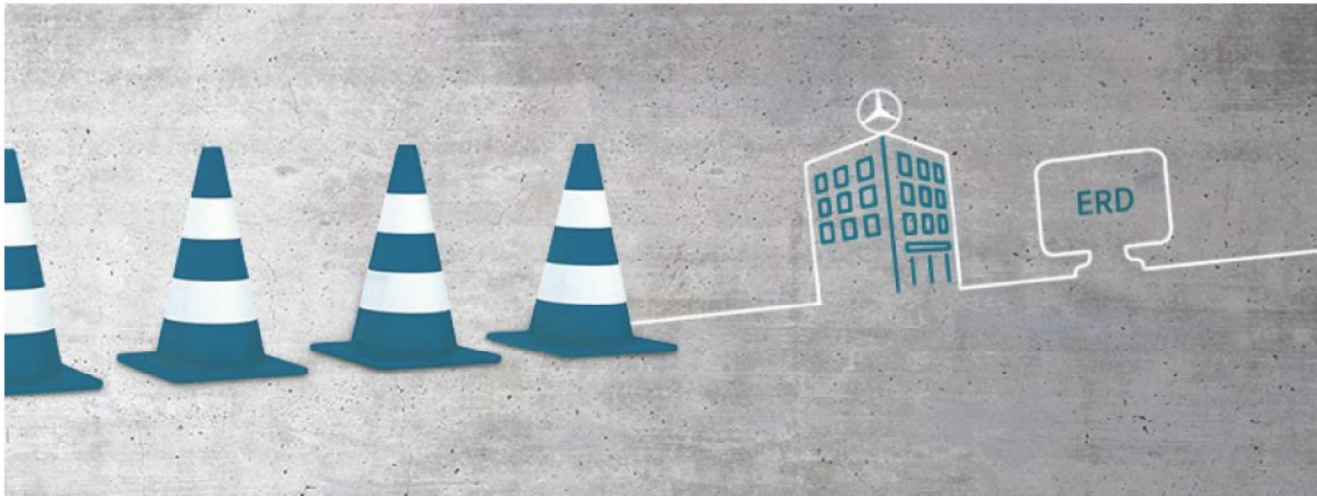
## Treatment of Violations Policy A 31.4

## Contact Person

NAMES REDACTED

## Policy Owner

NAMES REDACTED

**Purpose of Policy / Management Summary**

The Policy specifies the BPO process and the responsibilities of the parties involved in the BPO procedure. In addition, the Policy sets measures according to which violations are evaluated and the consequences determined.

**Changes to Previous Version**

04/2018: Polish language version added

03/2018

- Adjustment of BPO responsibility and BPO process
- Distinction between rule violations in such with a major risk and such with a minor risk for the company and its employees
- Specification and addition of case categories
- Introduction of a risk-based initial review by the BPO
- Duty to report focused on cases with major risk
- Risk as decisive factor for the company
- No longer doubled information of affected employees
- Exceptions of the obligation to investigate in case the company has no interest in investigating the allegations or punishing the offender
- Suspension of limitation periods
- Clear description of the role of the Neutral Intermediary



## Treatment of Violations Policy A 31.4

### Action Requirement

For members of managing bodies of Framework Light companies

This is an indispensable policy. Your company falls within the scope of application of this policy. Please enact this policy immediately.

### Scope of application

This policy applies to all employees and members of managing bodies of Daimler AG and of all controlled Group companies.

### Period of Validity of this Version

3/8/2018 - 3/7/2023

### Last Revision of this Version

4/12/2018

### Topic

Integrity & Compliance (Disciplinary Measures)

### Approval

NAMES REDACTED

7/24/2017

### Documentation

Published in the Enterprise Regulations Database (ERD) in the Daimler Employee Portal at 4/12/2018.

### Mandatory documents

Policy Documents

Treatment of Violations Policy: 10 Pages

Communication document: 8 Pages

#### Further Applicable Regulations

- [KBV 3.2 Hinweisgebersystem BPO und Umgang mit Regelverstößen](#)
- [C 169.1 Investigation Policy](#)
- [Specification of the Treatment of Violations Policy \(further clarification and addition of local legal provisions\)](#)
- [KBV 1118.2 Rechte und Pflichten bei unternehmensinternen Untersuchungen im Zusammenhang mit Regelverstößen](#)
- [SAR 1.1 SAR Hinweisgebersystem BPO, Neutraler Mittler und Umgang mit Regelverstößen](#)
- For Germany only:



## **1 Principles**

The company places trust in all its employees and expects them to uphold the principles and guidance of the Integrity Code when acting on behalf of the Daimler Group, to be guided by ethical values, to treat each other and business partners fairly, to follow the law and Daimler Group rules, and to fulfill their duties under their employment agreements. The Daimler Group expects its managers to act as role models for the staff in all the above areas.

In its Integrity Code, the Daimler Group, in cooperation with its staff, has defined the type of conduct expected within the company. This conduct is further detailed in additional policies and instructions.

Mistakes provide an opportunity to learn for the future. For that reason, they must be identified, openly addressed and remedied.

Violations, particularly against laws and the Integrity Code, will not be tolerated. Appropriate disciplinary measures will be taken. If necessary, law enforcement authorities will be notified. All employees shall be treated fairly during investigation of violations. Under employment law, violations are assessed in accordance with the principle of proportionality, taking into account the severity of the violation of duty as well as the employee's past service, his or her responsibility within the company and the circumstances of the case.

The Whistleblower System, Business Practices Office (BPO), and the position of Neutral Intermediary for Germany were created as independent institutions to enable protected reporting of violations of regulations. As a special form of protection, whistleblowers in Germany can contact the Neutral Intermediary, who receives tip-offs and forwards them to the BPO in anonymous form. The BPO classifies whistleblower reports according to the risk posed. It ensures that reported misconduct is effectively investigated and takes steps to remedy identified risks.

## **2 BPO Whistleblower System and Neutral Intermediary**

### **2.1 Types of Violations**

Violations, particularly violations of legal or the Group's internal regulations, are divided into those that pose a major risk and those that pose a minor risk to the company and its employees.

In particular, violations posing a serious risk to the company include the following:

- Corruption, antitrust and money laundering offenses
- Theft, fraud and undue enrichment offenses of significant scope or amount (over €100,000)
- Severe injury to physical or mental well-being
- Severe cases of sexual harassment, discrimination and racism
- Criminal violations of data protection rules
- Accounting and bookkeeping violations with a significant impact that can be detected externally
- Serious violations in connection with engineering specifications and/or technical safety
- Violations of human rights (e.g. violating the principles of the UN Global Compact)
- Severe violations in connection with environmental regulations
- Export control or sanctions violations
- Severe violations of the integrity of the whistleblower system, for example, severe violation of whistleblower anonymity or reporting obligations under Section 2.2
- Other major risks, e.g. violations causing the company to suffer significant losses (over €100,000)
- Violations that are likely to do severe harm to the company's reputation
- Severe violations of the Group's internal agreements to the disadvantage of employees

## 2.2 Reporting of Violations

Anyone who encounters or learns of concrete, factual evidence of a possible violation of legal or the Group's internal regulations should report them. The proper authorities for reporting violations posing a major risk are the BPO and Neutral Intermediary. Violations that pose a minor risk should be reported to the employee's direct supervisor or the appropriate unit, for example, Human Resources, Corporate Security or Corporate Data Protection.

If there is evidence of violations that pose a major risk, managers are obligated to report it to the BPO or Neutral Intermediary. If the evidence points to a violation that poses a minor risk, managers should report it to the appropriate unit, for example, Human Resources, Corporate Security or Corporate Data Protection, provided the manager is unable to investigate and correct the misconduct independently.

If there are extensive, ongoing internal investigations, the member of the Board of Management in charge of the Integrity and Legal Affairs Division and Chief Compliance Officer can give their approval to grant exceptions to the reporting requirement.

Employees can also contact their employee representatives in accordance with local regulations.

## 2.3 Responsibility of the BPO and the Neutral Intermediary

### 2.3.1 BPO

As a rule, the BPO is responsible for suspected violations that pose a major risk to the company and its employees.

The BPO documents the reports it receives and performs an initial review in accordance with the four-eyes principle. The results of the review are also documented.

Any reports received by the BPO of suspected violations posing a minor risk shall be forwarded to the appropriate unit, such as Human Resources, Corporate Security or Corporate Data Protection to be examined for concrete, factual evidence and further investigation. The whistleblower is notified in advance that the report is being forwarded. If the whistleblower does not agree to the forwarding of his or her report, the whistleblower can inform the BPO, stating the reasons why. Taking the reasons given by the whistleblower into account, the BPO examines whether the report nevertheless must be forwarded or if the case can remain within the BPO. If the report is forwarded anyway, the whistleblower can request that the tip-off be sent in anonymous form.

If the suspicions of a violation posing a minor risk are confirmed, the responsible HR unit will decide in consultation with the respective manager whether to take disciplinary action. Once the matter is closed, it must be reported to the BPO. If, during the investigation, evidence of a violation posing a major risk is discovered, the BPO must be notified immediately.

In cases of suspected violations posing a major risk, the BPO examines the facts for concrete evidence, issues a detailed, written investigation order and assigns the case to the appropriate investigative unit (Corporate Audit, Corporate Security, Corporate Data Protection, MB Bank or Legal). If, as part of the order issued by the BPO, local investigative work is to be conducted by central units, the local head of Human Resources is to be notified in advance that an investigation will be conducted. The local head of Human Resources must then notify the local employee representation. Those parties will not be notified if either of them is the subject of the investigation. In this case, a corresponding deputy will be notified. Once the investigations are complete, the investigative unit prepares a report on its findings and forwards it, after internal approval, to the BPO. Afterwards, the BPO makes a decision concerning the outcome of the case and documents it.

If the suspected violation is confirmed, the case is immediately turned over to the Labor Law Unit (HRP/LL).

If the company has no interest in investigating the suspicions or punishing the offender (e.g. because the affected employee has left the company or the statute of limitations has expired), it can refrain from an investigation.

In the absence of concrete, factual evidence, no investigation will be ordered unless additional reports containing concrete factual evidence are received to support the original allegation.

#### 2.3.2 Neutral Intermediary (Germany)

The Neutral Intermediary is an independent attorney who is appointed by the company for Germany and sworn to secrecy vis-à-vis the company. The Neutral Intermediary receives tips regarding regulatory violations from the company's employees, customers or business partners.

After compiling the facts of the case as provided by the whistleblower, the Neutral Intermediary obtains the whistleblower's consent to forward the report to the BPO without performing a separate review. The report can be sent in anonymous form if so requested by the whistleblower.

Contact takes place either in writing or by e-mail. If the Neutral Intermediary feels that personal contact is required, the Intermediary shall request a meeting with the whistleblower.

The Neutral Intermediary also forwards tip-offs received anonymously to the BPO immediately without a separate review. If a whistleblower contacts the Neutral Intermediary directly, the Neutral Intermediary will advise the employee and ask any necessary questions. Other than collecting the necessary information, the Neutral Intermediary does not conduct its own investigation.

To protect the whistleblower's anonymity, the company is barred from accessing the information stored by the Neutral Intermediary under any circumstances.

#### 2.4 Protecting Whistleblowers

Employees who report possible violations based on concrete, factual evidence are protected by the company. The confidentiality of their statements shall be guaranteed. Employees who feel they have suffered repercussions as a result of their report of a violation should contact the BPO. The BPO shall receive and review the facts of the case. Discrimination against or intimidation of an employee because he or she has reported a violation constitutes a breach of the Integrity Code and is subject to disciplinary action under employment law.

Whistleblowers should reveal their identity so that they can be asked questions that could be helpful to the investigation. If a whistleblower requests that his or her identity not be revealed to other entities within the company, this request must be honored. However, completely anonymous reports are also possible if not expressly prohibited under national laws. They shall be investigated to the same extent by the BPO, provided they contain concrete, factual evidence.

Whistleblowers will be notified of the final decision on the BPO case and whether the allegation was with merit, provided they do not remain anonymous.

## 2.5 Investigative Principles for Ensuring Fair Treatment of Employees Who Are Suspected of Violations

If a suspected violation requires investigation, the investigating unit is required to inform the affected employee immediately in writing unless tactics intended to aid the investigation make notifying the employee impossible. In such instances, the employee must be notified at the first possible opportunity. The employee shall be given the opportunity to respond to the allegations as soon as possible. The employee is allowed to have a person whom he or she trusts (e.g. a member of the Works Council or attorney) present during questioning. If the employee so desires, his or her manager will not be immediately notified of the suspicions unless questioning of the manager is required for examination of the facts.

All employees who are the subject of an investigation regarding a violation are treated fairly. The affected employee is presumed innocent as long as there is no proof of a violation. Incriminating and exonerating evidence shall be given equal consideration in the investigation. Once the final decision on the case has been made, the employee will receive written notification from the competent unit. If the violation is confirmed, his or her supervisor shall also be notified of the results of the investigation.

The right to refuse to provide evidence is governed by local legal regulations.

Employees may exercise their legal right to refuse to answer questions if the investigation involves criminal allegations. In that case, they may suffer no reprisal as a result of their refusal to testify.

In cases involving violations of employment law, employees have no such right to refuse to answer questions.

If the investigation reveals early on that the allegations are unfounded, questioning and notification of the employee is not required.

If the investigation reveals that the suspicions were unfounded, the employee may decide whether his or her manager should be informed, provided the manager has not already been made aware of the matter. At the request of the employee, the manager or other management staff shall announce in an appropriate fashion that the employee was wrongly suspected.

If materials related to the investigation are part of the employee's personnel file, he or she shall have the right to view them if required by applicable laws.

If it is proven that one employee has accused another employee of a violation despite knowledge to the contrary, the accuser shall be deemed in violation of the Integrity Code and subject to disciplinary action.

## 2.6 Employees' Obligation to Cooperate

All employees are required to support the investigating units. This includes submitting all requested business documentation and providing complete and truthful information regarding business transactions unless prohibited by law. This applies to questioning of witnesses and managers as well. Any attempts by an employee to hinder an investigation by influencing or colluding with witnesses is considered a serious breach of his or her employment duties, and disciplinary action will be taken.

### 3 Decisions on Measures Taken in Response to Violations

#### 3.1 General criteria

To determine which measures are appropriate in response to a violation, the following criteria are to be considered and weighed on the basis of proportionality:

- The type and severity of the violation
- Risk posed to the company
- Form of fault (intent or negligence)
- The amount of the damage or loss
- Damage to the company's reputation
- Role model function of managers
- Past service and previous conduct of the affected person in the company
- The attitude of the affected employee regarding the violation
- Affected employee's cooperation in verifying the facts of the case and providing compensation for the damage or loss
- Self-disclosure

Accusations are to be carefully weighed against any mitigating circumstances. In similar cases, the same criteria are to be used for evaluating the severity of the violation. The severity of the measures to be taken will be determined by the severity of the violation as determined above.

#### 3.2 Possible Measures

The specific measures are governed by local law. Therefore, individual entities may apply different and/or additional measures, or they may be prevented from taking certain actions.

The following measures may be considered depending on the severity of the violation:

- Verbal or written warning
- Final warning
- Training measures
- Reassignment or transfer
- Separation agreement or opportunity to resign voluntarily
- Termination with option of amended conditions of employment
- Ordinary termination
- Extraordinary termination
- Suspension

Other measures may be taken if the employee is appointed as a member of a governing board (e.g. Board of Management or CEO) and his or her employment is based on a contract for Board Members/CEOs.

#### 3.3 Description of Measures

##### 3.3.1 Warning

Verbal or written warnings are given in cases of minor violations. A warning may also be issued if the employee did not act intentionally, but a warning is necessary to emphasize the importance of the violated rule or to make the employee aware of the unintended consequences of his or her actions.

##### 3.3.2 Final warning

Final warnings are given in the case of violations that are not yet grounds for termination after the first offense but that, if repeated, may be considered serious enough to justify termination.

### 3.3.3 Training measures

It may be necessary, particularly in the case of unawareness of rules or carelessness and in addition to another non-terminating disciplinary measure, to provide the employee with training.

### 3.3.4 Reassignment or transfer

Reassignment or transfer may be indicated in addition to or in place of another measure if the employee's duties harbor a risk of repeat violation or if the violation has resulted in a loss of confidence in the employee's ability to fulfill his or her duties.

### 3.3.5 Separation agreement or voluntary resignation

If the company wishes to separate itself from an employee, it may give the employee the opportunity to resign voluntarily or conclude a separation agreement with the employee.

If there is a clear risk that termination may result in a lawsuit to enforce it, the company can conclude a separation agreement that provides for severance pay of up to half a month's pay per year of employment. Severance pay exceeding half a month's pay per year of employment is permitted only under special circumstances and only with the approval of the Labor Law Unit (HRP/LL) and the head of the HR division.

For employees with foreign employment contracts in other countries, the amount of severance pay normal for the respective country may be offered, generally after confirmation by a law firm.

For managers at Level 2 or higher, the severance pay must also be approved by the members of the Board of Management in charge of HR and IL.

Otherwise, separation agreements are to be established without severance pay.

Promises to disclose the departure to external parties in a positive manner shall not be granted if there were grounds for termination. The issuance of a qualified letter of reference remains unaffected.

### 3.3.6 Termination with the option of amended conditions of employment

Termination of the existing employment relationship with the simultaneous offer of an employment agreement under different terms or for other duties may be considered if it is necessary to remove the employee from his or her previous duties but doing so is not possible without amending the terms of the employment agreement. This type of termination will only lead to the end of the employment relationship if the employee does not agree to the changes.

### 3.3.7 Ordinary termination

Employees may generally be terminated with proper notice based on the circumstances of the case and, if applicable, after prior warning in the case of the following types of violations:

- Violation of criminal laws (except those that fall under Section 3.3.8)
- Accepting or giving invitations or gifts of inadmissibly high monetary value
- Severe violation of the general principle of equal treatment
- Severe violation of the duty to treat employees and business partners with respect
- Destruction of evidence or other significant attempt to hinder an investigation
- Breach of manager's duty to report suspected or committed violations that pose a major risk to the company and its employees



### 3.3.8 Extraordinary termination

Employees may be terminated without notice for due cause based on the circumstances in the case of violation of criminal laws of significant severity, serious breach of contractual duties, unreasonable disruption of the employment relationship or gross violation of the Integrity Code, typically constituted by:

- Bribery or granting of an undue advantage to government officials or business partners and their representatives
- Accepting bribes in the form of money or other similar privileges
- Breach of trust or fraud for personal benefit or the benefit of a third party
- Intentional or grossly negligent inaccuracy in bookkeeping or accounting
- Criminal acts against a person's physical well-being or freedom
- Theft or embezzlement
- Sexual harassment
- Serious cases of workplace bullying
- Substantial enrichment by using company resources/property for private purposes without a contractual agreement or express permission
- Discrimination/reprisal against whistleblowers
- Accusation and reporting of other employees for suspicion of violations despite knowledge to the contrary

### 3.3.9 Suspension

If the company intends to terminate an employee, or if the company finds continued employment unreasonable for other reasons, the company may, depending on the legal situation, suspend the employee from his/her duties until the end of the period of notice with or without pay if it is no longer acceptable for the employee to remain on the job. Depending on the legal situation, an employee may also be released from his/her duties without pay for other reasons.

### 3.4 Exclusion of Measures

Measures can be excluded based on the classification of the violation as one that poses a major risk or a minor risk as described in Section 2.1.

Disciplinary measures for violations posing a minor risk can be imposed up to three months after they have been revealed to the HR unit, but no more than six months after the violation itself. Measures for violations posing a major risk can be imposed up to 12 months after they have been revealed to the HR unit. No sanctions are imposed for violations posing a major risk that were committed more than five years in the past.

If the violations are criminal actions, then the period in which the company may take disciplinary action in response to the violations will be based on the respective statute of limitations.

The limits specified above are suspended for the duration of the investigation into suspected violations that pose a minor risk. Suspension shall begin upon notification of the affected employee that an investigation will be conducted, and it shall end upon written notification of the results of the investigation being sent to the affected employee but after no more than three months.

Deviating regulations are allowed on the basis of mandatory legal provisions. Different limits must be reported to the policy owner and will be documented in the further applicable regulation, "Treatment of Violations Policy Specifications."

### 3.5 Hearing of the Affected Employee

Prior to deciding on a measure, the company has to give the employee a hearing. The employee is allowed to have a person whom he or she trusts (e.g. a member of the Works Council or attorney) present during questioning. The employee's supervisor must also be given a hearing.

### 3.6 Decision, Communication of Results

The decision shall be made by the responsible HR unit unless local laws prescribe otherwise. In severe cases of confirmed violations falling within the scope of responsibility of the BPO, the decision is to be made by the Business Practices Committee (BPC) in matters concerning employees with a German employment contract or a contract as member of a governing board or CEO. In cases involving employees in other countries, the BPC must be informed of the decision and will conduct a review.

In BPO cases, the final decision must be reported immediately to the BPO, which will file it along with the other documentation related to the case.

### 3.7 Employee Representatives' Rights to Participate

The participation rights of employee representatives are guaranteed throughout the proceedings in accordance with the respective applicable regulations.

## 4. Other Measures in Connection with Violations

### 4.1 Reduction in Compensation and Consequences for Promotions

#### 4.1.1 Effects on variable compensation

For rule violations with a written disciplinary measure, variable compensation must be reduced accordingly where permitted by law.

Employees evaluated under the LEAD system will receive deductions in their individual rating for target achievement. For employees subject to the new Performance Management System, a deduction will be made from the company bonus.

Depending on the type of disciplinary measure, the following ranges apply for deduction in increments of five percentage steps:

Disciplinary measure	Deduction from individual target achievement (LEAD)	Deduction from company bonus
Written warning	0% to 20% points	0% to 20%
Final warning	20% to 50% points	20% to 50%
Ordinary termination	50% to 80% points	50% to 80%
Extraordinary termination	80% to 150% points	80% to 100%

In determining the amount of the deduction within the range, the criteria in Section 3.1 are be applied and weighed appropriately.

Deductions under the Performance Management and LEAD process are applied to the evaluation period that follows pronouncement of the disciplinary measure. They apply for the entire year, even if the employee transfers jobs during the year.

Corresponding reductions in pay are also to be imposed if disciplinary action cannot be taken because the affected employee is leaving or has already left the company.

4.1.2 Effects on income review and phantom shares for managers at Level 3 and above  
If provided, phantom shares and income reviews are allocated in accordance with the following principles whenever disciplinary measures have been taken:

	PPSP allocation	Income review
Written warning without a deduction	Not specified	Not specified
Written warning with deduction	Allocation $\leq \emptyset$	Increase $\leq \emptyset$
Final warning	Allocation $< \emptyset$	Increase $< \emptyset$
Ordinary termination	N/A	N/A
Extraordinary termination	N/A	N/A

#### 4.1.3. Consequences for promotions

Promotion to the next higher level is not granted for 12 months following the disciplinary measure if the employee receives a warning with an effect on compensation. In the case of a final warning, promotion will not take place for 24 months following the disciplinary measure. Any confirmation of potential must be revoked.

#### 4.1.4 Effects on cash bonuses

Cash bonuses or other similar individual payments are not to be issued to employees against whom the company has taken written disciplinary measures based on this policy during the same calendar year as the disbursement or the prior calendar year. This does not apply to written warnings without an effect on compensation.

#### 4.2 Claims for Recovery and Damages

Any existing claims for recovery, repayment and/or damages based on proven rule violations will be enforced against the responsible employee where legally possible.

#### 4.3 Criminal Charges

Criminal charges will be filed in the case of criminal actions if required by law or in the interest of the company.

The company may refrain from filing criminal charges in the following cases in particular:

- The employee confesses and is willing to provide compensation for any damage or loss.
- It is in the interest of the company.

#### 4.4 Documentation

Where allowed by law, the company maintains a list of personnel who have left or were forced to leave the company on account of a proven violation of rules or regulations. The list helps prevent these persons from being rehired by the Daimler Group or, in the case of contractual partners of the Daimler Group, from being placed in or assuming positions of responsibility in which they may work directly with the Daimler Group. In maintaining this list, the company ensures compliance with all applicable data protection requirements.

### 5 Retention Periods for Information Collected as Part of Investigations

If an investigation reveals that the reported allegation was unfounded, information about the employees collected as part of the investigation is to be deleted immediately. Documentation will not be kept in the employee's file.

If violations posing a minor risk were confirmed, the information collected on the employees will be deleted from the BPO's records after one year.

If violations posing a major risk were confirmed, the information collected on the employees will be deleted after six years.

In the case of violations posing a major risk that were not proven but for which the suspicions were not completely eliminated, records will be deleted after two years. This information can be used again only with the approval of the Corporate Data Protection Officer and, in the case of data concerning employees in Germany, upon notification of the IT officer of the employee representation council.

Deviating periods can apply only under specific national laws.

## **6 Notification of Employees and Employee Representatives**

Once a year and in the context of their responsibility, the German employee representative bodies shall receive a statistical report on cases received by the BPO and their outcomes, broken down by hierarchical level. In particular, the report shows the number of cases, affected locations, types of violations, status and results of the investigations.

Employees will be notified regularly of applicable policies and any changes thereto. Every employee is encouraged to read this information and to stay continuously abreast of any changes and additions to the policies.

## **7 Conflicting Legal Provisions**

If individual regulations of this policy are not applicable due to country-specific, mandatory regulations, the necessary changes must be coordinated with Labor Law (HRP/LL) and the Business Practices Office (GC/PB). Deviating provisions and supplemental information is documented by the policy owner in the further applicable regulation, "Treatment of Violations Policy Specifications."

ATTACHMENT C

DAIMLER

26 July 2019

## AECD Documentation Guidelines - EXECUTIVE SUMMARY

July 2019

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Daimler AG



## U.S. AECD Disclosure Documents

- U.S. Environmental Protection Agency (USEPA) sets forth requirements for an OEM's certification applications
- Each application for certification of a light duty vehicle must include:
  - a list of all auxiliary emission control devices (AECDs) installed on any applicable vehicles;
  - a justification/purpose for each AECD;
  - the parameters sensed and controlled by the AECD (measured & modeled parameters that are a part of, or a factor in, an entry and/or exit condition);
  - for each AECD that results in a reduction in effectiveness of the emission control system, a detailed justification and rationale for why it is not a defeat device. *40 C.F.R. § 86.1844-01(d)(11)*
- The presence of any defeat device is strictly prohibited

*Auxiliary Emission Control Device* means any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.

**Critical concept: AECD disclosures must be true, accurate, and complete**

# Defeat Device Justifications

## Defeat Device

*Defeat device* means an AECd that **reduces the effectiveness of the emission control system** under conditions which may reasonably be expected to be encountered in **normal vehicle operation and use**, unless:

- 1) Such conditions are **substantially included** in the Federal emission test procedure;
- 2) The need for the AECd is justified in terms of **protecting the vehicle against damage or accident**;
- 3) The AECd does not go beyond the requirements of **engine starting**; or
- 4) The AECd applies only for emergency vehicles. *40 C.F.R. § 86.1803-01*

## Justifications

*Substantially Included* - A function is activated on the certified portion of the US test procedures (i.e., FTP75 or highway (2nd cycle) or US06 (2nd cycle) tests) for a significant portion of time when all activating conditions were present

*Engine/Vehicle Protection* - The function is **necessary** to protect the vehicle or engine against **damage or accident** and results in the **minimum necessary** reduction in emissions control when viewed in consideration of other contemporaneously **available technology** in the industry

*Engine Starting* - The function does not go beyond the requirements of **engine starting** if it is necessary to address a requirement of **engine start**, as distinct from **engine warm up**, and is not used to compensate for poor engine design

# General Guidance: Common AECDC Examples

Gasoline
Engine or Catalyst Warmup Strategy
Adjustments to Commanded Enrichment
A/C-on specific calibrations that reduce emission control effectiveness
Adjustments to emission control systems based on ambient temperature
Adjustments to emission control systems based on altitude and air pressure
Modified gear shift for engine warm up
Diesel
Dual Dosing Strategy
Engine Warmup Strategy
Adjustments to EGR based on temperature
Adjustments to emission control systems based on ambient temperature
Adjustments to emission control systems based on altitude and air pressure
Modified gear shift for engine warm up

The above lists are illustrative examples only; they DO NOT constitute complete listings of all potential AECDCs for gasoline or diesel vehicles.

DAIMLER

4 June 2019






## AECD Documentation Guidelines

June 2019

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Daimler AG

# Table of Contents

	Background & Objectives	1
	General AECD Disclosure Guidelines	2
	Other Considerations	3
	Practical Guidance	4
	Appendix	5

# Table of Contents



## Background & Objectives

1



## General AECD Disclosure Guidelines

2



## Other Considerations

3



## Practical Guidance

4



## Appendix

5



# Background

## Overview

This document offers compliance guidance on U.S. vehicle emission regulations, specifically in connection with identifying and disclosing all Auxiliary Emission Control Devices (AECs).

A few factors make identifying AECs difficult. **The definition of AEC is very broad** such that many vehicle functions with no emission impact or even a positive emission impact may qualify as an AEC. The definition was written in the context of older vehicle technologies, in particular heavy duty. **EPA has not made many statements about the application of this definition to newer, light duty vehicle technologies.**

## Objective

This internal guidance document aims to help Daimler experts appropriately identify all AECs that must be disclosed in each Certificate of Conformity (COC) application.

Experts must **critically assess new functionalities and calibrations**, and when deciding whether disclosure is required, **should err on the side of more disclosure.**

# U.S. AECD Disclosure Documents

- U.S. Environmental Protection Agency (USEPA) sets forth requirements for OEM's certification applications
- Application for certification of a light duty vehicle must include:
  - a list of all auxiliary emission control devices (AECD) installed on any applicable vehicles;
  - a justification/purpose for each AECD;
  - the parameters sensed and controlled by the AECD (measured & modeled);
  - for each AECD that results in a reduction in effectiveness of the emission control system, a detailed justification and rationale for why it is not a defeat device. *40 C.F.R. § 86.1844-01(d)(11)*
- The presence of any defeat device is strictly prohibited

**Application for Certification - Part 1**  
**2018 Model Year**

**Specific Sections**

**Test Group**  
 JMBX020H11  
 JMBX020H11  
 JMBX020H11

**Durability Group:**  
 JMBX020H11

**Emission Family:**  
 JMBX020H11

**EPA Summary Sheet No.:**  
 JMBX020H11

**Durability Group Description:**  
 On-Diagnostic - Four Stroke - water cooled -  
 gasoline - turbocharged - direct injection -  
 petrol - 1.6 l / 100 km

**Test Group Description(s):**  
 2.0 l - 4 l turbocharged with 60 l / 100 km petrol motor

**Applicable Standards:**  
 50 States - For 3 l / 100 km  
 California - LEV III SULEV 30






**Vehicle(s) Covered:**  
 C 250e GLC 250e 4MATIC

**Vehicle(s) Tested:**  
 X253E20H11C 19.8 l / 100 km - ZN208  
 W009E20H11C 19.8 l / 100 km - ZN208 (150.1 NP)

**Signature and Date:**  
 Signature: [Redacted]  
 Date: [Redacted]

Critical concept: AECD disclosures must be true, accurate, and complete

# Table of Contents

	Background & Objectives	1
	General AECD Disclosure Guidelines	2
	Other Considerations	3
	Practical Guidance	4
	Appendix	5

# General Guidelines: Overview

## Basic Premise

- All AECDS **must be disclosed** in the certification application. (*40 C.F.R. § 86.1844-01*)
- AECDS that **reduce the effectiveness of the emission control system**, and do not meet one of the applicable exceptions, are **prohibited defeat devices**.
- As part of the AECD documentation, and in an abundance of caution, the Company's current practice is to **disclose transmission functions** that may be used for the purpose of and/or indirectly **result in modulating** the operation of a part of the **emission control system**, even if such functions may not necessarily constitute an AECD.
- **Failure to document AECDS** or to justify potential defeat devices can result in **penalties, fines and vehicle recalls**.
- **When in doubt, disclose** a function as an AECD and **contact QM/RZA and/or RD/T**.

# AECDs – Key Definitions

## Auxiliary Emission Control Device

*Auxiliary Emission Control Device (AECD)* means any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.

*Emission Control System* means a unique group of emission control devices, auxiliary emission control devices, engine modifications and strategies, and other elements of design designated by the Administrator used to control exhaust emissions of a vehicle. 40 C.F.R. § 86.1803-01

## Defeat Device

*Defeat device* means an AECD that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use, unless:

- 1) Such conditions are substantially included in the Federal emission test procedure;
- 2) The need for the AECD is justified in terms of protecting the vehicle against damage or accident;
- 3) The AECD does not go beyond the requirements of engine starting; or
- 4) The AECD applies only for emergency vehicles.

40 C.F.R. § 86.1803-01



# Potential AECD Justification: Substantially Included

## Regulatory Justification

“Substantially included in the Federal emission test procedure”

## Summary

A function is activated on the **certified portion** of the US test procedures (i.e., **FTP75** or **highway** (2<sup>nd</sup> cycle) or **US06** (2<sup>nd</sup> cycle) tests) for a **significant portion of time** when **all activating conditions** were present.

## Key Questions & Considerations

- Is the function activated during the completion of the **applicable certified portion** of the testing procedure? *[USEPA, CCD-04-12 (HD) (June 15, 2004) at 1]*
  - If the function is only **sometimes activated** during the test procedures (e.g., **varies based on driver influence**), a **different justification** is be preferable
- In the alternative, a “**manual demonstration**” approach is possible, but must first be **approved by the agencies**. If approved, the manual demonstration procedure must be **fully disclosed** in the AECD documentation,<sup>1</sup> and the demonstration must show the **full extent** of the function during certification testing.
- If yes, is the function **activated long enough** during the test to allow its **impact on the vehicle’s emissions** to be meaningfully reflected in the test’s emissions results? *[USEPA, CCD-04-12 (HD) (June 15, 2004) at 1]*
  - Likely requires **fact-specific consideration** of the operation and resulting emissions impacts of the function
  - Emissions control for operation outside of and between official test modes is expected to be similar to emissions control demonstrated at test modes *[USEPA, CCD-04-12 (HD) (June 15, 2004) at 2]*
  - Regulators are likely to view this term to mean that the **predominant impact of the function is observed on the testing cycle**.
    - For example, a function that operates briefly on cycle but is active for a substantial period of normal driving off cycle would likely not be considered substantially included.



# Potential AECD Justification: Component Protection 1/2

## Regulatory Justification

“Protecting the vehicle against damage or accident”

## Summary

A function is **necessary** to protect the vehicle or engine against **damage or accident** and results in the **minimum necessary** reduction in emissions control when viewed in consideration of **other contemporaneously available technology** in the industry.

## Key Questions & Considerations

- Does the AECD reduce the effectiveness of the emission control system to **protect the vehicle, engine or a component against damage or accident**?
- Does the AECD operate to the **minimum extent necessary** to prevent such damage or accident? *[USEPA VPCD 98-13 (Oct. 15, 1998) at 9-10]*
  - What kind of information is available to support this justification? E.g., spec documents from suppliers, industry papers supporting use of the technology in the industry, field data and/or testing data.
  - Is the emission system degradation that occurs when the AECD is activated “**no more than necessary**” to protect a well-designed engine?
- Are there any **other technology options available** to substitute for the AECD that would eliminate or reduce the need for the emissions-increasing AECD? *[USEPA VPCD 98-13 (Oct. 15, 1998) at 9-10; USEPA AC No. 24-3 (Jan. 19, 2001) at 4-5; 65 Fed. Reg. 59,896, 59,919-20 (Oct. 6, 2000); 57 Fed. Reg. 31,888, 31,894-95 (July 17, 1992)]*
  - Is the AECD **necessary** and the **vehicle design adequate** as compared to manufacturer’s peers and their use of available technology?
  - Is the design or technology “**frail**”, outdated, or inferior to competitors/peers? Are **better alternatives** available?

## Potential AECD Justification: Component Protection 2/2

### Key Questions & Considerations

- From 40 CFR §86.1809-10 Prohibition of defeat devices- (d) The following provisions apply for vehicle designs designated by the Administrator to be investigated for possible defeat devices:
  - (1) The manufacturer must show to the satisfaction of the Administrator that the vehicle design does not incorporate strategies that unnecessarily reduce emission control effectiveness exhibited during the Federal Test Procedure or Supplemental Federal Test Procedure (FTP or SFTP) when the vehicle is operated under conditions that may reasonably be expected to be encountered in normal operation and use
  - In other words- in reviewing the entry conditions of a component protection strategy- the agency is likely judge strategies that do not result from 'extreme use cases' as unnecessary reductions in emissions control effectiveness, and therefore may determine that the justification does not apply or such strategies qualify as defeat devices. It is important to note that the criteria for acceptance of this justification for a strategy is that failure to use the strategy would result in damage (i.e. failure) or accident. The agencies will challenge the use of this justification if it seems likely from a review of the entry conditions that the strategy will occur frequently.

# Potential AECD Justification: Engine Start

## Regulatory Justification

“The AECD does not go beyond the requirements of **engine starting**.”

## Summary

A function does not go beyond the requirements of **engine starting** if it is necessary to address a requirement of **engine start**, as distinct from **engine warm up**, and is not used to compensate for **poor engine design**.

## Key Questions & Considerations

- Is the AECD necessary to address a requirement of **engine start** or is it also used after engine start (such as for **engine warm up**)?
  - **Engine start** is a **short and distinct** time period characterized by starting the engine “according to the manufacturer’s recommended starting procedures in the owner’s manual.” *[40 C.F.R. § 86.136-90]*
  - **Engine start** is separate from **engine warm up**. The engine warm up cycle occurs after engine start and is defined as “sufficient vehicle operation such that the **coolant temperature has risen by at least 40 deg. F** from engine starting and reaches a **minimum temperature of 160 deg. F**.” *[40 C.F.R. § 86.1803-01]*
  - An AECD is only justified under this provision if it is required for **engine starting**, not for **engine warm up**.
- An example of a justified engine starting AECD is a fuel solenoid “used to facilitate engine starting and only operates during cranking and for the first 10 seconds after starting when the engine coolant is below 50 degrees F and the [ECU] is in a default mode. Consequently, this solenoid reduces the effectiveness of the emission control system (fuel strategy and catalyst) but is justified by its limited operation.” *[USEPA, EPA420-B-98-002 at A24-25 (1999)]*
- Is the AECD used to **compensate for poor engine design** when compared to available technology employed by other OEMs? *[USEPA AC 24-3]*
  - If so, it may not be justified under this provision.

# General Guidelines: Information Requirements

The application must include:

	Per regulation 40 C.F.R. § 86.1844-01(11)	Per what EPA expects
1	<p>A description of <b>all</b> AECDs installed on any applicable vehicles (i.e., all vehicle models and model variants covered by the application)</p>	<ul style="list-style-type: none"><li>• An explanation of the function's purpose</li><li>• A description of how and when the function operates, including a listing of parameters sensed and actions taken</li></ul>
2	<p>For <b>every</b> AECD, a list of <b>all</b> of the parameters sensed and controlled</p>	<ul style="list-style-type: none"><li>• Including a listing of <b>all</b> related <b>measured and modeled</b><sup>1</sup> parameters that are a part of, or a factor in, an entry and/or exit condition and <b>all</b> actions taken</li><li>• A listing of <b>all entry and exit conditions</b><sup>2</sup></li><li>• A listing of relevant calibration information (particularly for diesel emission controls)</li></ul>
3	<p>For each AECD that results in a <b>reduction in effectiveness of the emission control system</b> (i.e., potentially a defeat device), a justification and rationale for why it is not a defeat device</p>	<ul style="list-style-type: none"><li>• A listing of regulatory justifications for the function</li><li>• An explanation of potential emission impact and conditions under which the impact would occur, with reference to on- and off-cycle impacts (particularly for diesel AECDs)</li></ul>

1. Modeled parameters are those physical parameters that are calculated using a mathematical model rather than a sensor. Calculations may not need to be provided (particularly for gasoline models); however, underlying parameters used in the model should be summarized if possible (either in measured parameters list or in the remarks section). 2. These are the calibrations that act as prerequisite conditions for an AECD's activation or deactivation. These do not need to include conditions that are "calibrated off."

# General Guidance: Common AECD Examples

## Gasoline

- Engine or Catalyst Warmup Strategy
- Adjustments to Commanded Enrichment
- A/C-on specific calibrations that reduce emission control effectiveness
- Adjustments to emission control systems based on ambient temperature
- Adjustments to emission control systems based on altitude and air pressure

## Diesel

- Dual Dosing Strategy
- Engine Warmup Strategy
- Adjustments to EGR based on temperature
- Adjustments to emission control systems based on ambient temperature
- Adjustments to emission control systems based on altitude and air pressure

The above lists are illustrative examples only; they DO NOT constitute complete listings of all potential AECDs for gasoline or diesel vehicles. Please refer to the Appendix for additional examples.

# Table of Contents



Background & Objectives

1



General AECD Disclosure Guidelines

2



Other Considerations

3



Practical Guidance

4



Appendix

5



## Other Considerations: Necessity of the Function

*Consider the following questions before seeking to describe and justify the function in the disclosure*

### Stated Purpose

- What problem or issue does the AECD resolve?
- What are the consequences of not employing this AECD?

### Motivations

- What was considered when calibrating the AECD/how were the calibration values chosen?
- Do any of the AECD calibrations, including exit/entry, have a test cycle orientation?

### Impact and Application

- Does the AECD operate the same way under similar driving conditions on road versus during testing?
- Does the AECD have an emission impact (positive or negative)?

### Quality of Disclosure

- Does the AECD behave as explained in the documentation?
- Does the description cover the full range of behavior of the AECD under the circumstances across a reasonably foreseeable operating range for normal driving?

## Other Considerations: Baseline Calibrations

### Baseline calibrations ARE NOT exempt from evaluation under the AECD disclosure requirements

- Unlike the EU, US authorities do not define “baseline” functionality for light duty vehicles. EPA has not clarified whether all baseline calibrations need to be disclosed.
- Agency guidance suggests that baseline functions can be AECDs:
  - “. . . base emission control calibrations meet the definition” of an AECD. [*USEPA, CCD-04-12 (HD) (June 15, 2004) at 1 (citing USEPA AC No. 24-3 (Jan. 19, 2001); USEPA VPCD 98-13 (Oct. 15, 1998))*]
  - An “AECD can include any element of design or control strategy including, for example, elements of the basic fuel metering and timing strategy imbedded within the engine’s computer control system.” [*USEPA AC No. 24-3 at 3-4.*]
- If baseline calibrations have historically been disclosed, then they should continue to be disclosed.
- Baseline calibrations that have the same effect as an AECD or that have an impact on off-cycle emissions should be disclosed (particularly for diesel vehicles).
- Experts should flag for QM/RZA and RD/T any baseline calibrations that might appear to have any cycle orientation.
- Further, any baseline calibrations that will result in a substantially different emission impact off-cycle as compared to on-cycle should be re-evaluated.